PART A

IONOSPHERIC DATA

ISSUED
MAY 1959

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 177
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
22 May 1959

IONOSPHERIC DATA

CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numberical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949
December		150*	150*	150	42	11	15	33	53	86	108
November		150*	150*	147	35	10	16	38	52	87	112
October	139	150*	150*	135	31	10	17	43	52	90	114
September	141	150*	150*	119	30	8	18	46	54	91	115
August	142	150*	150*	105	27	8	18	49	57	96	111
July	141	150*	150*	95	22	8	20	51	60	101	108
June	143	150*	150*	89	18	9	21	52	63	103	108
May	146	150*	150*	77	16	10	22	52	68	102	108
April	150*	150*	150*	68	13	10	24	52	74	101	109
March	150*	150*	150*	60	14	11	27	52	78	103	111
February	150*	150*	150*	53	14	12	29	51	82	103	113
January	150*	150*	150*	48	12	14	30	53	85	105	112

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1958.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	184	183	181		

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 143 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Decepcion I.
Tucuman, Argentina

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
Brisbane, Australia
Canberra, Australia
Townsville, Australia

Commonwealth of Australia, Department of the Interior:
Macquarie I.

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Bunia, Belgian Congo
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

Escola Politecnica, University of Sao Paulo:
Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Port Lockroy

Defence Research Board, Canada:
Baker Lake, Canada
Ottawa, Canada
Winnipeg, Canada

Danish National Committee of URSI:
Godhavn, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

French National Center for Telecommunications Studies:
Dakar, French West Africa
Djibouti, French Somaliland
Tananarive, Madagascar

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Indian Council of Scientific and Industrial Research, Radio Research Committee, New Delhi, India:
Ahmedabad (Physical Research Laboratory)
Bombay (All India Radio)
Calcutta (Institute of Radio Physics and Electronics)
Delhi (All India Radio)
Kodaikanal (India Meteorological Department)
Madras (All India Radio)
Tiruchy (All India Radio)
Trivandrum (All India Radio)

Geophysical and Geodetic Institute, Genoa, Italy:
Monte Capellino, Italy

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.
Cape Hallett (Adare), Antarctica
Christchurch, New Zealand
Rarotonga, Cook Is.
Scott Base, Antarctica

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway
Tromso, Norway

Manila Observatory:
Baguio, P.I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, U.S.S.R.:
Sverdlovsk

United States Army Signal Corps:
Fletchers Ice I.
Ft. Monmouth, New Jersey
Grand Bahama I.
St. John's, Newfoundland
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Chimbote, Peru
Little America, Antarctica
Maui, Hawaii
Panama Canal Zone

National Bureau of Standards (Central Radio Propagation Laboratory), continued:
Point Barrow, Alaska
Puerto Rico, W.I.
San Francisco, California (Stanford University)
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D.C.
Wilkes Station, Antarctica

TABULATIONS OF ELECTRON DENSITY

Reduction of hourly ionospheric vertical soundings to electron density profiles is currently a part of the systematic ionospheric data program of the National Bureau of Standards. Scaled data for this purpose are being provided by stations operated by NBS and the U.S. Army Signal Corps. For the present, the hourly profile data from one NBS station, Puerto Rico, are being provided in the CRPL F Series. These data are in place of the other quantities formerly provided by this station. The very considerable task of scaling the ionograms for this purpose is undertaken by Mr. T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station (Ramey AFB, P. R.); the computations are performed at the NBS Boulder Laboratories.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

Quantity	Units	Remarks
Electron Density (N)	(electrons/cm^3 $\times 10^{-3}$)	Body of table; given at each 10 km of height.
N_{max}	" " "	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above h_{max} is always given as exactly equal to N_{max} (unless h_{max} coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	(electrons/cm^2 column $\times 10^{-10}$)	Obtained by integration of the profile between the limits HMIN and HMAX.

ELECTRON DENSITY

PUERTO RICO 60 W 5 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	207	234	249	252	291	231	201	207	101	109	108	108
HMAX	352	324	342	402	421	344	327	298	272	302	302	309
SHMAX	487	335	350	338	334	310	338	338	822	1708	2052	2259
KM												
430					417							
420					417							
410				362	413							
400				362	403							
390				359	387							
380				352	366							
370				341	338							
360	625			325	298							
350	625		557	306	258	446						
340	616		556	283	214	446						
330	592	608	549	257	165	438	432					
320	559	606	532	226	119	422	430					
310	517	589	510	195	77.6	397	422			2032	2430	2465
300	465	553	467	161	44.9	365	408	608		2031	2429	2449
290	406	495	398	127		323	386	602		2007	2396	2379
280	346	425	310	94.5		268	358	580	1446	1949	2315	2294
270	286	335	219	65.7		209	325	540	1445	1852	2187	2142
260	224	229	112	42.1		143	286	483	1400	1727	2011	1948
250	170	127	12.4			83.8	236	408	1291	1572	1806	1739
240	117	54.8				47.2	184	298	1111	1368	1556	1534
230	75.6						132	179	896	1159	1316	1321
220	49.6						79.7	83.8	679	939	1111	1119
210	12.4						46.5	30.9	462	716	896	917
200									323	557	716	754
190									233	427	573	619
180									175	327	457	519
170									134	257	362	432
160									105	204	286	362
150									90.5	164	236	300
140									82.4	136	198	251
130									79.0	124	171	214
120									75.6	117	155	192
110									72.1	97.2	143	170

ELECTRON DENSITY

PUERTO RICO 60 W 5 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	108	107	110	108	110	209	219	200	219	223	211	
HMAX	337	359	369	367	354	360	338	342	347	337	372	
SHMAX	2376	2531	2427	2514	2222	1722	1327	1278	1024	778	950	
KM												
380												1004
370			1969	2064								1004
360		2064	1961	2058	2032	2096						997
350		2055	1933	2034	2030	2080		1583	1393			979
340	2128	2026	1878	1988	2008	2032	1969	1583	1387	1215		950
330	2121	1977	1807	1922	1961	1942	1955	1565	1356	1208		912
320	2087	1907	1717	1832	1887	1834	1897	1523	1291	1171		860
310	2022	1806	1612	1721	1786	1685	1796	1455	1211	1104		800
300	1926	1701	1495	1593	1669	1519	1669	1360	1107	1004		724
290	1799	1570	1376	1460	1528	1321	1483	1240	975	886		643
280	1669	1433	1240	1329	1394	1119	1265	1107	834	742		557
270	1528	1298	1143	1204	1255	896	1050	960	661	573		467
260	1386	1167	1016	1073	1127	698	774	794	508	417		362
250	1240	1035	896	950	993	492	477	643	335	262		262
240	1107	917	794	844	865	310	229	477	198	119		161
230	982	804	698	745	745	161	83.8	310	90.5	49.6		83.8
220	875	716	615	665	634	71.4	12.4	161	12.4			47.2
210	784	649	551	596	529	12.4		71.4				
200	688	591	495	534	427			3.1				
190	608	540	442	462	344							
180	524	487	394	389	280							
170	446	425	335	310	223							
160	375	348	272	249	182							
150	315	280	234	209	154							
140	274	236	194	179	135							
130	240	198	161	158	122							
120	213	187	152	143	109							
110	161	168	143	112	49.6							

ELECTRON DENSITY

PUERTO RICO 60 W 6 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	222	210	230	209	212	290	269	241	110	110	110	110
HMAX	327	306	329	296	296	397	345	295	265	284	278	296
SHMAX	574	459	352	239	146	171	148	261	913	1262	1650	1784
KM												
400						223						
390						222						
380						218						
370						211						
360						203						
350						192	286					
340						175	285					
330	987		634			152	275					
320	979		626			124	255					
310	939	716	595			94.5	226					
300	875	714	546	492	240	63.8	189	643				1907
290	784	697	477	488	239		143	639		1786		1901
280	667	663	380	462	234		88.3	612		1782	2294	1870
270	529	618	286	417	223		12.4	560	1446	1738	2276	1809
260	375	553	189	353	208			462	1441	1643	2205	1717
250	219	469	112	270	189			310	1398	1501	2075	1606
240	112	375	54.8	179	161				1308	1321	1887	1462
230	53.1	274		107	117				1175	1119	1669	1312
220		135		56.5	65.7				1004	917	1411	1171
210		12.4		5.5					794	698	1096	1004
200									557	524	754	848
190									375	375	529	679
180									262	278	417	529
170									198	214	348	417
160									155	172	286	335
150									127	141	240	281
140									111	123	202	236
130									101	114	178	198
120									82.3	103	166	186
110									49.6	71.4	127	112

ELECTRON DENSITY

PUERTO RICO 60 W 6 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	110	108	108	108	106	230	220	216	209	226	266	
HMAX	346	341	347	352	353	356	349	357	341	350	381	
SHMAX	2111	2211	2300	2227	2107	1460	1433	1159	896	733	639	
KM												
390												854
380												854
370												847
360				1938	1907	1846		1446				825
350	1789	2032	2032	1937	1906	1840	1759	1441	1143	982		794
340	1785	2032	2026	1922	1889	1809	1748	1413	1143	974		748
330	1760	2014	1998	1876	1851	1748	1711	1361	1131	945		679
320	1714	1966	1948	1816	1793	1657	1642	1282	1100	903		599
310	1640	1885	1866	1741	1705	1540	1556	1186	1050	848		498
300	1545	1773	1762	1646	1601	1386	1433	1065	978	764		389
290	1435	1640	1643	1528	1483	1224	1298	917	886	670		278
280	1316	1493	1509	1394	1354	1050	1143	768	784	562		170
270	1201	1354	1368	1265	1216	854	982	625	679	446		49.6
260	1096	1212	1224	1143	1084	643	814	487	562	335		
250	982	1073	1080	1016	946	446	625	362	446	229		
240	875	950	960	889	807	219	432	229	323	143		
230	786	834	834	774	691	12.4	219	127	198	43.2		
220	716	735	729	670	573		12.4	49.6	97.2			
210	655	652	629	582	485				12.4			
200	596	573	553	500	403							
190	540	500	485	432	335							
180	483	437	417	362	280							
170	425	384	362	300	232							
160	362	340	298	255	192							
150	300	298	246	219	161							
140	246	259	205	187	140							
130	198	222	178	165	126							
120	187	192	169	151	117							
110	143	167	143	112	90.5							

ELECTRON DENSITY

PUERTO RICO 60 W 7 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL						F	F	F				
HMIN	257	228	216	196	191	285	236	250	110	110	108	108
HMAX	352	300	289	284	343	368	351	315	283	278	291	304
SHMAX	572	424	312	208	186	98	197	253	1000	1315	1782	1883
KM												
370						161						
360	896					160	286					
350	896				170	155	286					
340	883				170	147	282					
330	851				169	134	273					
320	804				167	118	257	540				
310	735				164	99.3	237	538				2227
300	631	917			159	73.9	209	518			2294	2222
290	508	898	625	375	154	46.5	172	481	1446		2293	2176
280	362	841	617	374	148		137	417	1445	1907	2260	2067
270	229	742	589	365	142		101	335	1416	1889	2172	1907
260	97.2	608	540	345	133		69.1	219	1350	1818	2032	1735
250		432	467	317	123		47.7	12.4	1240	1683	1826	1537
240		219	362	268	110		16.4		1111	1512	1601	1341
230		60.0	219	205	93.4				939	1316	1368	1127
220			71.4	138	73.5				735	1027	1119	960
210				77.6	54.1				540	794	875	794
200				26.3	36.2				375	608	679	643
190									270	446	540	529
180									198	344	427	427
170									154	270	348	356
160									123	219	291	305
150									105	176	244	262
140									95.2	150	207	209
130									90.3	138	182	178
120									85.3	131	166	168
110									12.4	83.8	112	143

ELECTRON DENSITY

PUERTO RICO 60 W 7 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	110	110	108	112	115	107	237	198	227	210	221	188
HMAX	324	348	353	354	361	348	359	339	336	327	330	325
SHMAX	2287	2544	2382	2146	2157	1956	1555	1223	947	848	675	625
KM												
370					1846							
360			2032	1846	1846		1969					
350		2161	2031	1844	1834	1885	1957					
340		2154	2012	1825	1801	1878	1918	1669	1473			
330	2294	2127	1971	1786	1749	1849	1850	1655	1467	1191	1027	814
320	2291	2078	1907	1708	1677	1797	1754	1608	1430	1186	1015	812
310	2260	2005	1814	1621	1576	1724	1636	1526	1359	1159	978	798
300	2196	1916	1695	1526	1468	1623	1478	1420	1251	1107	923	770
290	2090	1798	1568	1423	1341	1501	1291	1274	1111	1041	842	731
280	1962	1669	1431	1308	1216	1368	1073	1111	939	939	735	672
270	1803	1528	1283	1201	1096	1221	834	932	735	834	619	591
260	1631	1386	1155	1096	975	1065	573	754	540	704	492	508
250	1446	1240	1019	993	854	903	335	540	323	557	348	432
240	1257	1096	903	875	745	768	60.0	348	152	389	198	344
230	1080	960	802	774	652	631		198	40.2	219	83.8	251
220	917	834	709	679	573	519		107		90.5		161
210	781	716	643	585	502	425		60.0				102
200	667	625	579	492	446	348		12.4				60.0
190	562	540	519	417	389	286						12.4
180	467	462	454	342	341	232						
170	389	383	389	274	291	191						
160	325	325	330	219	249	158						
150	281	276	282	176	209	132						
140	232	229	244	160	179	115						
130	197	197	207	153	158	107						
120	182	184	186	146	146	101						
110	143	40.2	143			60.0						

ELECTRON OENSITY

PUERTO RICO 60 W 8 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	209	232	252	225	217	216	240	244	117	110	115	110
HMAX	289	338	343	358	314	324	343	309	258	291	299	293
SHMAX	331	303	247	302	205	168	172	295	722	1471	2041	1927
KM												
360				348								
350			417	347			251					
340		432	417	342			251					
330		429	408	331		251	247					
320		419	389	318	348	251	239					
310		398	358	302	348	246	226	608				
300		373	318	280	340	234	211	601		1969	2430	2430
290	679	339	262	250	322	219	187	577		1968	2411	2428
280	669	295	198	219	296	198	156	540		1939	2345	2383
270	633	245	135	183	257	171	119	477		1860	2227	2279
260	573	189	65.7	143	204	140	83.8	362	1341	1752	2069	2118
250	477	132		104	149	108	49.6	179	1323	1574	1866	1907
240	348	77.6		65.7	92.8	76.4	1.3		1250	1341	1640	1669
230	219			29.1	54.8	49.6			1127	1065	1383	1404
220	104				18.0	17.0			896	854	1182	1182
210	12.4								661	679	982	960
200									446	529	794	754
190									286	417	608	585
180									198	342	467	467
170									150	281	362	380
160									123	232	298	320
150									106	191	249	276
140									94.8	163	216	233
130									88.7	143	194	204
120									75.6	133	179	186
110										71.4		12.4

ELECTRON OENSITY

PUERTO RICO 60 W 8 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	110	109	110	110	110	120	230	238	226	215	235	250
HMAX	327	343	341	346	350	342	344	359	327	331	392	400
SHMAX	2354	2417	2295	2179	2068	1881	1297	1128	895	795	941	849
KM												
400											982	982
390											982	976
380											975	957
370											959	924
360								1612			934	883
350		2096	2096	1969	1907	1816	1756	1599			898	834
340		2094	2096	1964	1896	1815	1754	1556		1167	857	762
330	2193	2073	2078	1939	1862	1799	1729	1478	1500	1167	800	679
320	2187	2023	2032	1884	1807	1761	1675	1376	1491	1152	732	585
310	2155	1933	1948	1808	1723	1699	1590	1240	1446	1112	643	477
300	2097	1830	1846	1711	1623	1607	1483	1050	1359	1050	551	371
290	2009	1715	1712	1593	1501	1495	1341	854	1240	960	457	251
280	1893	1584	1570	1460	1368	1376	1175	643	1073	854	362	152
270	1756	1459	1416	1324	1221	1253	982	446	854	729	262	88.3
260	1604	1329	1269	1171	1061	1107	754	240	608	573	170	49.6
250	1446	1204	1119	1027	917	982	477	112	362	417	83.8	
240	1291	1084	993	889	781	854	179	26.3	161	251	43.3	
230	1127	971	875	768	670	729	12.4		44.9	112		
220	990	875	774	661	582	608				44.9		
210	834	784	679	573	502	487						
200	704	679	601	502	439	389						
190	591	591	524	441	378	310						
180	500	500	454	383	316	251						
170	425	425	395	335	257	207						
160	367	362	344	286	204	174						
150	323	305	298	244	161	151						
140	282	259	259	211	142	137						
130	246	228	225	190	136	124						
120	210	194	205	172	130	12.4						
110	49.6	143	49.6	12.4	83.8							

ELECTRON DENSITY

PUERTO RICO 60 W 9 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	261	232	224	219	257	311	261	216	120	110	117	110
HMAX	405	339	329	393	401	429	376	323	301	284	306	303
SHMAX	792	700	689	669	460	378	417	536	1379	1683	2464	2182
KM												
430						524						
420						520						
410	1004				540	506						
400	1002			573	540	483						
390	986			573	536	450						
380	951			570	523	406	608					
370	899			563	503	355	606					
360	834			553	477	294	592					
350	754			538	442	233	567					
340	661	1096		518	401	167	536					
330	562	1086	982	496	353	102	483	834				
320	446	1054	976	471	300	53.1	417	833				
310	327	997	954	443	246		335	818	1969		3018	2643
300	219	917	923	410	192		255	784	1968		3007	2640
290	138	807	868	373	138		170	733	1939	2643	2944	2581
280	83.8	667	784	335	92.8		102	661	1856	2635	2820	2445
270	47.2	508	679	291	57.4		49.6	562	1742	2536	2654	2249
260		310	551	245	18.0			457	1556	2339	2403	2032
250		152	417	194				335	1341	2083	2128	1786
240		60.0	262	138				209	1096	1786	1786	1556
230			97.2	79.7				104	854	1446	1483	1321
220				12.4				40.2	608	1050	1191	1111
210									417	774	917	917
200									286	573	679	754
190									212	417	519	619
180									161	327	408	508
170									127	262	329	417
160									107	215	276	351
150									95.6	179	237	300
140									90.3	157	210	259
130									84.9	141	192	229
120									12.4	133	180	210
110										83.8		83.8

ELECTRON DENSITY

PUERTO RICO 60 W 9 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B									A	A
HMIN	110		110	110	110	110	198	215	222	217	240	250
HMAX	321		343	346	337	342	337	336	333	331	335	340
SHMAX	2546		2605	2418	2267	2179	1242	1036	975	766	692	662
KM												
350			2536	2327		2096						
340			2534	2320	2161	2095	1786	1640	1500	1240	1191	1027
330	2643		2505	2269	2154	2077	1775	1632	1499	1240	1187	1018
320	2643		2439	2186	2122	2032	1722	1586	1472	1218	1153	991
310	2613		2328	2070	2063	1954	1612	1490	1403	1159	1086	955
300	2524		2190	1922	1969	1863	1474	1356	1308	1061	975	892
290	2396		2014	1769	1858	1742	1308	1182	1184	946	834	794
280	2218		1826	1604	1727	1598	1127	982	1019	807	679	667
270	2032		1631	1429	1572	1446	939	774	834	655	508	508
260	1826		1446	1269	1416	1274	735	557	625	492	335	262
250	1631		1240	1111	1257	1111	557	335	417	310	161	12.4
240	1446		1065	975	1111	946	375	179	198	161	12.4	
230	1257		903	854	946	807	229	83.8	71.4	77.6		
220	1080		768	742	794	679	127	33.2		30.9		
210	932		643	634	643	573	63.8					
200	794		549	532	529	485	12.4					
190	661		469	446	432	403						
180	540		406	378	355	327						
170	446		353	320	298	255						
160	368		305	274	251	198						
150	310		262	237	215	164						
140	269		222	202	182	138						
130	234		196	176	158	122						
120	210		184	163	145	109						
110	161		127	97.2	83.8	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 10 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							F			C		
HMIN	220	206	220	215	219	204	256	240	110	107	108	110
HMAX	317	302	289	310	296	384	337	307	259	300	289	314
SHMAX	541	403	240	244	154	242	137	270	774	1498	1616	1924
KM												
390						219						
380						219						
370						217						
360						213						
350						208						
340						200	240					
330						190	239					
320	939					180	231					2096
310	932	698		403		166	217	557				2092
300	900	697		398	298	151	198	552		1907		2052
290	848	681	540	382	296	135	170	530		1886	2064	1952
280	764	643	530	358	285	119	135	490		1823	2046	1826
270	643	580	492	323	265	104	97.2	432		1708	1969	1669
260	492	508	432	274	236	89.8	44.9	335	1341	1556	1866	1501
250	348	425	344	219	194	76.4		219	1321	1383	1719	1324
240	198	323	240	155	138	63.8		12.4	1250	1143	1537	1171
230	83.8	219	127	97.2	77.6	52.7			1127	939	1321	1004
220		127	12.4	43.3	12.4	42.3			960	754	1073	861
210		44.9				18.0			735	608	834	742
200									508	477	643	634
190									335	371	498	549
180									233	292	389	457
170									170	235	316	375
160									135	191	259	310
150									115	159	219	254
140									105	143	187	215
130									96.1	137	173	194
120									84.9	132	165	185
110									40.2	112	143	127

ELECTRON DENSITY

PUERTO RICO 60 W 10 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			B	A		B		A	A			A
HMIN	109	107	108	107	110	114	240	250	260	250	271	260
HMAX	328	334	341	339	333	350	333	344	364	350	362	337
SHMAX	2101	2158	2169	2129	1916	1843	1065	812	766	705	653	545
KM												
370									1167		1004	
360									1165		1004	
350			2064			1786		1290	1140	1050	990	
340		2128	2063	2000	1816	1776	1669	1288	1088	1038	955	982
330	2096	2126	2046	1990	1815	1745	1667	1260	1012	1004	899	976
320	2084	2098	1988	1954	1798	1695	1638	1195	907	946	824	947
310	2038	2039	1914	1888	1762	1616	1573	1115	794	867	729	893
300	1945	1938	1808	1795	1705	1523	1468	990	655	774	591	814
290	1826	1822	1682	1680	1617	1411	1327	848	508	667	477	698
280	1683	1683	1540	1556	1512	1283	1162	691	335	540	310	557
270	1524	1537	1386	1416	1400	1155	960	508	161	389		335
260	1359	1359	1221	1257	1269	1004	716	310	12.4	240		12.4
250	1216	1182	1065	1127	1119	861	417	40.2		83.8		
240	1080	1004	928	975	993	716	12.4					
230	946	861	804	834	875	585						
220	824	716	698	704	742	477						
210	716	608	599	596	619	380						
200	608	508	508	508	498	302						
190	516	435	439	432	398	233						
180	425	378	373	367	323	179						
170	355	327	323	310	257	127						
160	300	286	276	258	198	106						
150	254	235	224	219	164	96.4						
140	211	192	190	191	143	92.3						
130	194	176	175	171	136	88.3						
120	185	168	167	155	130	84.2						
110	143	152	149	143	40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 11 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A	S		A		N				A	A	
HMIN	250	250	253	240	189	179	336	95	110	110	116	110
HMAX	323	321	329	312	279	427	488	562	331	296	310	328
SHMAX	467	404	345	284	232	246	138	811	1004	1455	2199	2278
KM												
570								262				
560								262				
550								262				
540								262				
530								261				
520								260				
510								259				
500								258				
490							127	256				
480							127	254				
470							126	252				
460							123	249				
450							120	247				
440							116	244				
430						127	112	240				
420						127	105	237				
410						127	99.1	233				
400						126	91.4	229				
390						125	82.9	225				
380						124	73.3	221				
370						123	63.1	216				
360						122	50.9	210				
350						120	40.2	205				
340						118	12.4	200	1050			
330	939	854	661			115		194	1050			2327
320	937	854	653	540		113		188	1040			2316
310	912	833	625	540		110		183	1015		2607	2267
300	854	778	573	529		105		176	974	1846	2583	2182
290	768	688	508	500		101		169	917	1838	2510	2057
280	643	573	408	457	389	97.2		162	842	1793	2385	1907
270	477	417	286	396	385	93.0		154	754	1698	2218	1719
260	262	219	127	318	372	88.8		146	661	1570	2011	1534
250	12.4	12.4		219	348	84.7		137	565	1416	1762	1341
240				40.2	317	80.9		128	477	1240	1501	1159
230					274	77.3		119	396	1035	1216	990
220					219	73.6		111	323	834	982	834
210					152	68.2		102	262	661	754	691
200					83.8	60.0		93.3	215	524	573	582
190					12.4	46.5		85.4	179	403	467	492
180						6.8		78.3	151	310	382	417
170								71.4	127	246	320	351
160								66.2	112	202	274	302
150								61.1	101	169	233	262
140								57.4	94.5	147	204	226
130								54.2	90.1	137	184	198
120								50.9	85.6	128	143	187
110								42.5	60.0	12.4		143
100								15.5				

ELECTRON DENSITY

PUERTO RICO 60 W 11 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B										
HMIN	110	110	110	110	110	115	240	217	212	222	256	244
HMAX	350	362	345	340	355	371	340	353	338	355	367	356
SHMAX	2520	2904	2716	2432	2327	2195	1393	1334	1089	826	733	702
KM												
380						1938						
370		2430				1937					1004	
360		2430			1938	1925		1669		1096	1000	1050
350	2161	2411	2571		1935	1882		1667		1093	975	1046
340	2149	2366	2567	2294	1917	1822	2032	1646	1500	1072	933	1021
330	2116	2294	2531	2279	1881	1750	2013	1597	1492	1027	875	971
320	2060	2191	2459	2234	1827	1657	1958	1516	1457	960	802	900
310	1974	2070	2335	2161	1750	1543	1858	1407	1386	883	716	814
300	1870	1922	2201	2053	1658	1423	1727	1278	1301	784	616	691
290	1747	1771	2032	1921	1556	1298	1572	1143	1184	688	508	557
280	1612	1620	1838	1769	1435	1143	1362	975	1035	573	380	427
270	1474	1462	1646	1604	1316	1019	1119	814	875	446	240	298
260	1329	1327	1446	1446	1191	896	834	643	679	335	90.5	143
250	1204	1175	1274	1260	1073	781	446	477	492	219		54.8
240	1073	1038	1127	1080	950	670	12.4	310	323	119		
230	932	917	975	932	834	573		161	161	56.5		
220	807	804	834	804	726	477		60.0	60.0			
210	691	698	716	679	619	396						
200	585	599	616	573	524	323						
190	492	508	519	477	437	258						
180	417	432	439	403	362	209						
170	351	375	368	335	295	172						
160	300	327	310	286	245	143						
150	258	286	262	244	209	122						
140	224	244	223	210	179	109						
130	201	217	197	184	158	104						
120	187	203	185	169	147	97.8						
110	49.6	127	40.2	127	97.2							

ELECTRON DENSITY

PUERTO RICO 60 W 12 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL			J	J								
HMIN	225	233	271	200	188	248	254	259	119	108	115	110
HMAX	313	320	345	263	306	396	395	360	303	298	305	304
SHMAX	510	511	342	216	270	206	151	299	893	1708	2183	2140
KM												
400						198	161					
390						198	161					
380						196	159					
370						193	155					
360						188	150	417				
350			735			181	143	414				
340			731			173	134	405				
330			700			164	125	389				
320	1050	917	643			153	113	366				
310	1048	905	529		389	139	98.7	338	1096		2790	2607
300	1011	870	403		387	124	83.8	300	1095	2260	2782	2603
290	928	810	262		378	108	70.0	251	1078	2242	2716	2552
280	807	726	127		359	90.5	56.1	192	1038	2171	2584	2444
270	643	596		477	332	71.4	43.7	112	975	2032	2403	2271
260	462	446		476	298	51.7	18.6	12.4	896	1866	2135	2053
250	262	240		463	254	12.4			804	1640	1846	1810
240	104	71.4		432	209				691	1404	1556	1528
230	44.9			383	165				585	1096	1265	1240
220				310	124				462	854	982	1027
210				179	88.3				353	667	754	834
200				12.4	54.8				270	524	591	667
190					12.4				204	408	477	540
180									154	327	389	446
170									122	262	325	373
160									103	215	272	315
150									94.9	179	232	267
140									91.1	154	198	229
130									87.3	140	178	203
120									77.6	133	164	187
110										112		40.2

ELECTRON DENSITY

PUERTO RICO 60 W 12 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B			J		J			A	A	J
HMIN	112	113	107	110		111	225	201	207	234	252	230
HMAX	317	336	341	347		333	343	344	352	392	368	318
SHMAX	2236	2253	2393	2459		2062	1501	1226	815	769	586	452
KM												
400										939		
390										938		
380										928		
370										902	917	
360									1073	860	910	
350			2362	2500			1846	1500	1072	805	879	
340		2227	2361	2490		2227	1844	1499	1056	732	820	
330		2220	2336	2438		2225	1823	1478	1015	652	745	
320	2430	2180	2257	2336		2199	1773	1433	946	562	652	854
310	2420	2091	2135	2205		2131	1697	1366	867	467	540	845
300	2367	1976	1996	2032		2032	1589	1270	774	371	417	810
290	2264	1831	1820	1846		1893	1460	1155	679	274	298	747
280	2112	1669	1650	1646		1752	1312	1019	573	192	179	661
270	1942	1501	1465	1446		1588	1159	875	477	127	97.2	540
260	1747	1321	1291	1224		1411	990	729	371	83.8	49.6	375
250	1537	1127	1111	1050		1240	814	585	274	54.8		189
240	1341	975	946	889		1019	625	432	186	26.3		71.4
230	1119	834	820	745		814	335	286	112			3.1
220	932	726	709	634		643		179	63.8			
210	754	634	625	549		487		83.8	19.3			
200	631	560	553	469		362						
190	529	495	492	400		278						
180	446	435	441	346		219						
170	383	380	389	298		179						
160	331	335	346	259		146						
150	290	294	302	222		124						
140	253	255	262	187		111						
130	226	219	231	163		105						
120	206	205	209	151		98.5						
110			161	40.2								

ELECTRON DENSITY

PUERTO RICO 60 W 13 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	237	205	219	230	218	231	250	247	110	108	110	111
HMAX	310	291	334	342	334	375	316	303	259	277	296	304
SHMAX	453	341	339	294	205	208	109	232	668	1203	1730	1886
KM												
390						229						
370						229						
360						226						
350				375		221						
340			461	375	240	212						
330			461	372	240	202						
320			454	364	238	190	219					
310	896		441	351	233	174	218	540				2193
300	981	643	420	337	225	154	210	539			2000	2190
290	838	643	392	313	215	132	195	521			1994	2142
280	764	631	357	282	208	109	174	485		1669	1955	2050
270	655	599	310	245	189	86.1	143	417		1658	1876	1921
260	508	547	246	198	171	65.7	102	323	1143	1607	1771	1752
250	335	467	179	138	146	48.3	12.4	179	1120	1507	1620	1556
240	112	362	107	71.4	115	27.8			1041	1371	1446	1341
230		251	56.3	3.1	71.4				917	1201	1260	1143
220		127	5.5		21.7				774	982	1073	946
210		46.5							608	754	875	781
200									446	562	698	643
190									323	437	551	529
180									235	353	446	437
170									179	286	362	373
160									141	236	304	323
150									117	198	249	276
140									105	170	213	233
130									95.4	150	186	207
120									86.5	136	169	188
110									12.4	112	40.2	

ELECTRON DENSITY

PUERTO RICO 60 W 13 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B	B									
HMIN	107	110	107	110	107	112	240	224	202	238	244	230
HMAX	313	346	345	348	347	349	338	351	356	370	348	337
SHMAX	2106	2253	2389	2217	2226	1972	1217	1321	953	829	651	586
KM												
370										1050		
360									1500	1143	1042	
350		2000	2128	2096	2032	1846		1500	1140	1018	1050	
340		1996	2125	2085	2026	1836	1846	1490	1120	975	1042	917
330		1970	2104	2044	1998	1805	1832	1462	1080	917	1009	912
320	2032	1920	2061	1960	1948	1742	1776	1411	1024	850	953	887
310	2031	1838	1990	1858	1869	1669	1678	1353	953	754	865	839
300	2012	1743	1907	1727	1773	1566	1540	1274	865	655	754	770
290	1971	1626	1797	1584	1643	1446	1376	1182	764	540	619	679
280	1907	1487	1669	1429	1509	1316	1201	1073	655	417	477	573
270	1814	1324	1509	1257	1356	1197	982	939	540	298	298	457
260	1704	1186	1356	1084	1198	1073	754	807	437	179	143	310
250	1570	1050	1182	946	1050	932	417	643	335	90.5	49.6	161
240	1431	917	1004	814	903	794	12.4	462	229	26.3		71.4
230	1260	794	861	707	768	667		219	143			3.1
220	1080	698	729	629	652	562			79.7			
210	903	622	625	562	557	462			44.9			
200	742	562	540	508	477	382						
190	608	508	465	453	410	316						
180	492	446	400	396	351	262						
170	412	383	346	341	300	215						
160	353	325	298	286	255	182						
150	310	268	251	245	219	156						
140	270	222	207	209	190	137						
130	234	196	179	179	167	123						
120	210	186	170	168	151	114						
110	137	49.6	161	97.2	112							

ELECTRON DENSITY

PUERTO RICO 60 W 14 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		J	J									
HMIN	232	233	212	211	253	272	223	237	116	110	108	110
HMAX	327	329	283	449	407	395	353	323	288	290	302	332
SHMAX	489	422	312	742	331	192	241	302	835	1458	1841	2211
KM												
450				417								
440				417								
430				415								
420				413								
410				410	310							
400				406	309	251						
390				401	307	251						
380				394	302	246						
370				387	294	237						
360				378	285	222	262					
350				369	272	204	262					
340				359	259	185	260					1938
330	854	754		348	243	163	255	540				1937
320	848	746		338	223	135	248	540				1924
310	816	716		325	201	109	238	528			2327	1892
300	761	667		311	174	81.3	225	501			2326	1840
290	679	585	679	294	146	57.9	210	462	1215	1846	2286	1768
280	573	477	678	276	115	35.5	191	403	1204	1829	2187	1678
270	462	348	658	255	79.7		170	323	1157	1778	2032	1576
260	323	219	613	228	43.3		146	229	1073	1700	1810	1446
250	179	112	540	195			118	119	946	1584	1578	1316
240	71.4	49.6	417	156			87.2	40.2	794	1429	1316	1191
230			262	112			53.1		643	1216	1073	1061
220			83.8	60.0					492	982	854	917
210									371	735	691	784
200									286	540	573	667
190									224	403	477	551
180									179	316	403	457
170									146	258	341	382
160									124	215	286	323
150									108	185	240	276
140									96.5	161	205	237
130									89.5	143	178	204
120									77.6	134	164	186
110										83.8	135	127

ELECTRON DENSITY

PUERTO RICO 60 W 14 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B								A	A	A
HMIN	108	108	109	110	113	111	230	199	204	224	249	198
HMAX	329	340	344	368	354	346	349	363	350	359	358	331
SHMAX	2319	2584	2480	2573	2361	2152	1468	1366	843	715	638	654
KM												
370				2096				1420				
360				2089	2227			1419		960	939	
350			2362	2062	2224	2128	1816	1408	1096	953	933	
340		2396	2359	2010	2197	2123	1805	1382	1085	928	908	875
330	2327	2379	2328	1936	2135	2094	1770	1341	1054	880	863	875
320	2312	2330	2256	1851	2049	2039	1709	1282	997	820	800	867
310	2261	2242	2161	1747	1932	1951	1617	1216	924	745	716	846
300	2172	2132	2032	1618	1799	1839	1501	1133	842	652	619	810
290	2032	1985	1876	1487	1636	1708	1368	1027	735	551	508	764
280	1872	1820	1708	1354	1478	1556	1208	907	631	446	389	698
270	1688	1652	1519	1224	1301	1394	1035	781	519	335	240	608
260	1501	1483	1341	1080	1127	1240	854	655	403	219	97.2	498
250	1321	1324	1171	960	960	1035	643	524	298	127	12.4	375
240	1143	1159	1004	844	807	875	389	389	189	71.4		240
230	975	1004	861	754	691	716	12.4	251	112	40.2		152
220	834	875	735	672	594	573		143	65.7			88.3
210	704	742	631	601	516	467		71.4	34.6			53.1
200	599	631	540	532	453	371		12.4				12.4
190	516	532	469	462	389	298						
180	446	454	403	396	335	235						
170	389	395	348	325	281	189						
160	343	344	306	272	236	152						
150	310	304	269	224	198	127						
140	276	272	232	194	173	111						
130	240	237	206	175	156	106						
120	211	214	189	166	145	100						
110	179	189	143	127								

ELECTRON DENSITY

PUERTO RICO 60 W 15 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												A
HMIN		228	226	299	275	225	259	227	116	110	110	107
HMAX		330	323	419	421	367	353	320	312	305	303	299
SHMAX		399	266	275	331	358	217	332	1024	1920	2184	2271
KM												
430					389							
420				348	389							
410				346	386							
400				339	377							
390				324	363							
380				305	343							
370				281	318	375						
360				253	289	374	335					
350				222	251	370	335					
340				189	211	363	329					
330		625	389	152	172	351	317					
320		618	389	112	135	339	297	608	1096			
310		596	383	75.6	97.2	321	269	598	1095	2294	2716	
300		565	372	12.4	69.1	298	236	569	1085	2289	2713	2903
290		519	353		48.0	271	194	524	1060	2249	2666	2872
280		454	330		20.3	237	148	454	1018	2171	2556	2753
270		371	298			198	97.2	362	966	2055	2385	2589
260		274	249			157	12.4	262	892	1907	2161	2362
250		170	192			117		152	804	1692	1907	2096
240		83.8	127			75.6		77.6	716	1474	1640	1816
230		21.7	49.6			33.2		30.9	616	1240	1341	1501
220									516	960	1050	1191
210									417	735	834	939
200									318	540	655	716
190									240	417	529	557
180									189	323	427	446
170									149	262	355	362
160									124	219	292	305
150									108	186	245	262
140									96.6	161	213	232
130									90.8	142	185	209
120									85.0	133	169	192
110										40.2	60.0	180

ELECTRON DENSITY

PUERTO RICO 60 W 15 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A				A					F	F
HMIN	108	110	110	110	110	209	230	204	210	239	279	246
HMAX	334	348	355	336	347	361	339	335	315	380	381	342
SHMAX	2613	2548	2671	2237	2509	2026	1661	1277	754	701	645	656
KM												
390											1096	
380										896	1096	
370						2396				888	1074	
360			2430			2396				860	1012	
350		2327	2426		2294	2374				819	917	1265
340	2362	2316	2394	2465	2287	2316	2227	1727		766	814	1264
330	2359	2260	2329	2455	2254	2221	2210	1722		694	691	1229
320	2336	2177	2221	2373	2193	2089	2151	1686	1119	616	557	1143
310	2285	2067	2089	2244	2090	1925	2052	1603	1116	529	389	1004
300	2202	1934	1938	2080	1969	1727	1921	1495	1092	439	219	848
290	2102	1786	1769	1887	1839	1512	1747	1356	1043	353	90.5	661
280	1976	1636	1593	1688	1685	1281	1556	1208	969	262	12.4	446
270	1820	1465	1411	1490	1540	1050	1341	1035	875	170		219
260	1669	1312	1240	1281	1386	834	1119	875	764	102		97.2
250	1493	1159	1096	1127	1226	625	875	698	643	56.5		40.2
240	1321	1016	946	946	1080	446	608	508	519	5.5		
230	1127	889	824	807	932	298	240	335	335			
220	990	774	726	679	794	127		189	152			
210	854	679	643	573	655	12.4		71.4	12.4			
200	729	591	567	485	549							
190	619	508	495	410	446							
180	519	446	425	342	368							
170	439	383	356	286	304							
160	368	335	298	236	254							
150	315	286	249	191	215							
140	270	248	210	166	186							
130	235	219	193	156	165							
120	212	198	183	148	151							
110	189	161	143	112	83.8							

ELECTRON DENSITY

PUERTO RICO 60 W 16 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	F	F	F	F	F	F	F			A		A
HMIN	219	220	230	245	323		250	235	111	120	106	110
HMAX	321	307	318	325	436		349	318	296	302	312	314
SHMAX	638	629	438	264	282		245	416	1133	1700	2303	2541
KM												
440					348							
430					348							
420					343							
410					334							
400					321							
390					306							
380					288							
370					259							
360					219							
350					175		335					
340					127		333					
330	1004			484	65.7		326					
320	1004		735	483			313	661			2643	3057
310	991	1050	728	470			295	657		2096	2642	3051
300	955	1043	698	443			273	640	1341	2095	2607	2991
290	896	1013	649	403			243	611	1337	2067	2513	2865
280	814	960	580	348			212	569	1312	1993	2379	2668
270	704	875	508	274			175	514	1265	1893	2199	2403
260	573	774	425	179			119	437	1191	1747	1957	2096
250	446	643	323	60.0			40.2	348	1105	1556	1715	1786
240	262	477	209					198	993	1321	1474	1474
230	97.2	240	60.0						861	1096	1208	1201
220	12.4	40.2							729	875	975	982
210									591	679	794	794
200									446	524	655	643
190									335	408	551	540
180									248	329	462	462
170									189	262	382	395
160									149	219	315	335
150									123	185	262	291
140									110	163	226	248
130									104	152	196	213
120									98.8	97.2	177	192
110											164	161

ELECTRON DENSITY

PUERTO RICO 60 W 16 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A		A	A		B			J			
HMIN	106	107	110	110	110	117	209	235	200	239	266	227
HMAX	333	335	353	359	358	359	364	357	338	406	380	340
SHMAX	2928	2635	2759	2681	2690	2254	1972	1577	904	1168	815	791
KM												
410										1096		
400										1094		
390										1084		
380										1065	1215	
370							2161			1037	1202	
360			2536	2500	2430	2161	2158	1969		1000	1162	
350			2534	2486	2421	2149	2134	1962		951	1096	
340	2941	2643	2502	2437	2384	2109	2083	1928	1167	899	1004	1073
330	2939	2638	2430	2336	2319	2040	2003	1866	1158	834	889	1062
320	2906	2599	2280	2214	2216	1938	1907	1774	1117	762	754	1027
310	2832	2521	2145	2075	2096	1813	1771	1654	1050	679	608	973
300	2716	2400	1985	1907	1954	1669	1620	1509	969	591	432	909
290	2571	2237	1820	1727	1801	1524	1446	1341	875	500	251	826
280	2362	2050	1631	1537	1636	1371	1274	1162	774	408	119	735
270	2109	1826	1462	1359	1465	1208	1073	939	679	318	43.3	631
260	1858	1623	1291	1143	1274	1050	875	698	573	209		519
250	1612	1404	1143	990	1127	889	661	417	477	112		393
240	1383	1175	1004	854	975	742	477	143	389	40.2		251
230	1143	975	896	735	834	619	310		298			60.0
220	960	820	802	634	716	519	127		209			
210	794	698	724	557	616	427	12.4		97.2			
200	667	599	650	483	508	348						
190	565	516	573	423	398	280						
180	485	446	477	373	310	227						
170	412	389	389	327	246	187						
160	357	335	331	289	198	155						
150	310	286	290	253	171	132						
140	274	240	251	219	158	121						
130	243	217	215	187	151	113						
120	215	208	192	172	145	60.0						
110	189	198	179	161	83.8							

ELECTRON OENSITY

PUERTO RICO 60 W 17 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										•		
HMIN	211	239	227	235	217	223	226	249	116	113	110	110
HMAX	358	327	350	351	310	356	297	356	312	291	317	320
SHMAX	807	532	514	487	320	373	130	397	1183	1487	2146	2308
KM												
360	960			590		375		524				
350	956		661	590		375		523				
340	938		655	586		372		515				
330	905	917	637	575		366		501				
320	860	912	608	557		356		484	1393		2362	2571
310	800	887	569	531	492	344		459	1393		2352	2547
300	726	843	522	496	488	332	262	421	1379	2096	2305	2473
290	643	774	465	458	477	315	260	368	1346	2095	2218	2339
280	549	667	403	424	460	295	250	302	1296	2061	2089	2177
270	457	540	335	362	439	268	231	219	1245	1963	1925	1957
260	353	362	270	278	398	237	202	112	1131	1820	1727	1715
250	262	143	198	189	335	195	161	12.4	1004	1612	1534	1474
240	173	12.4	112	71.4	229	148	104		854	1368	1301	1240
230	102		40.2		97.2	90.5	44.9		679	1143	1065	1050
220	53.1				30.9				524	875	875	861
210									375	661	716	716
200									251	492	596	596
190									170	371	498	508
180									115	292	408	432
170									94.7	229	323	373
160									86.3	179	262	323
150									81.5	150	215	282
140									78.3	130	179	248
130									75.0	122	171	219
120									71.8	116	163	190
110											83.8	83.8

ELECTRON OENSITY

PUERTO RICO 60 W 17 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					A	A						
HMIN	112	113	108	110	113	110	222	227	197	201	260	231
HMAX	322	332	330	332	339	334	339	330	339	354	357	344
SHMAX	2388	2611	2499	2467	2490	2356	1848	1519	1251	944	751	687
KM												
360										1167	1191	
350										1165	1184	1050
340		2643		2571	2643	2500	2465		1446	1146	1152	1048
330	2500	2642	2571	2570	2626	2498	2449	2193	1439	1106	1096	1025
320	2500	2615	2550	2541	2568	2467	2392	2174	1412	1042	1004	973
310	2472	2549	2488	2470	2468	2403	2294	2117	1365	960	889	900
300	2401	2443	2376	2348	2324	2305	2145	2019	1295	865	742	804
290	2303	2294	2227	2194	2139	2161	1969	1889	1211	764	573	691
280	2161	2105	2050	2011	1928	1996	1762	1708	1107	661	389	573
270	1957	1907	1846	1786	1715	1820	1528	1474	990	562	198	446
260	1747	1669	1631	1578	1490	1631	1265	1208	848	446	12.4	298
250	1537	1468	1425	1362	1260	1446	960	875	716	335		143
240	1341	1216	1224	1143	1035	1240	540	508	585	229		65.7
230	1111	1004	1050	975	861	1027	198	127	446	138		
220	932	848	875	814	704	794			310	83.8		
210	781	716	716	679	573	573			161	47.2		
200	655	625	596	573	467	362			49.6			
190	551	540	500	485	371	251						
180	462	465	425	403	298	185						
170	389	400	367	335	235	149						
160	325	346	318	286	192	123						
150	278	302	278	244	161	104						
140	243	268	240	207	145	90.5						
130	218	243	209	179	137	81.1						
120	206	211	192	168	130	74.2						
110			180	143		40.2						

ELECTRON OENSITY

PUERTO RICO 60 W 18 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A			
HMIN	265	236	229	214	198	249	216	208	120	110	110	110
HMAX	345	312	296	277	294	371	336	318	278	283	296	296
SHMAX	550	491	449	291	172	155	120	319	776	1262	1725	1959
KM												
380						165						
370						165						
360						164						
350	1004					162						
340	1001					158	152					
330	974					152	152					
320	917	1050				147	149	477				
310	834	1049				141	144	474				
300	716	1016	960		274	131	136	461			2193	2500
290	562	943	954		273	119	129	438		1669	2184	2489
280	362	820	917	661	268	104	117	410	1191	1667	2111	2418
270	143	661	844	654	254	85.7	102	367	1180	1638	2000	2294
260		462	729	622	236	64.6	85.5	310	1137	1573	1838	2096
250		219	557	567	213	12.4	69.8	240	1061	1468	1631	1858
240		49.6	335	477	182		54.1	167	939	1327	1404	1612
230			71.4	335	143		41.4	102	794	1143	1143	1341
220				143	102		12.4	57.4	625	917	939	1073
210					60.0			12.4	446	716	742	834
200					12.4				323	551	596	661
190									226	432	492	532
180									161	344	410	446
170									121	274	342	378
160									100	223	291	325
150									93.4	183	248	278
140									88.6	159	213	240
130									83.8	141	186	210
120									12.4	132	170	189
110										83.8	112	143

ELECTRON OENSITY

PUERTO RICO 60 W 18 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL						B						J
HMIN	110	110	110	122	120	116	230	209	230	258	231	263
HMAX	309	334	333	348	341	326	327	342	363	378	347	356
SHMAX	2109	2445	2405	2546	2339	2063	1389	1227	929	824	705	466
KM												
380										1119		
370									1119	1113		
360									1118	1086		814
350				2396	2396			1473	1106	1037	1119	809
340		2362	2362	2387	2396			1473	1078	968	1111	774
330		2359	2360	2350	2374	2294	2032	1458	1035	883	1074	716
320		2331	2333	2284	2318	2286	2023	1421	975	784	1004	643
310	2396	2272	2267	2189	2216	2243	1978	1363	900	679	907	557
300	2377	2182	2178	2070	2089	2161	1896	1282	804	551	794	457
290	2312	2057	2046	1922	1925	2032	1786	1186	698	403	667	335
280	2197	1907	1889	1747	1747	1872	1620	1061	585	262	524	219
270	2032	1727	1719	1572	1556	1688	1420	932	477	119	362	83.8
260	1834	1534	1534	1383	1341	1501	1191	794	362	26.3	219	
250	1623	1341	1341	1191	1159	1321	939	643	229		112	
240	1404	1171	1159	1004	960	1127	573	508	127		53.1	
230	1191	1004	990	854	807	932	12.4	362	12.4			
220	982	861	834	729	667	735		198				
210	794	716	704	608	557	573		49.6				
200	655	608	596	516	469	446						
190	532	516	500	432	396	344						
180	446	432	429	362	329	268						
170	383	373	367	298	272	215						
160	331	318	318	249	227	176						
150	286	274	274	212	192	150						
140	248	233	233	179	165	131						
130	213	201	198	168	151	120						
120	192	188	185		12.4	97.2						
110	161	143	127									

ELECTRON DENSITY

PUERTO RICO 60 W 19 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A	A	A
HMIN	262	262	238	214	256	295	268	229	120	100	110	110
HMAX	364	339	311	274	407	415	376	312	287	298	301	326
SHMAX	506	559	411	240	319	257	271	380	925	1572	1833	2202
KM												
420						348						
410					362	348						
400					360	341						
390					355	327						
380					344	310	362					
370	834				328	286	361					
360	832				307	253	354					
350	812				281	215	342					
340	769	1050			253	175	324					
330	701	1038			219	135	301					2193
320	616	999	814		186	93.9	269	698				2188
310	508	934	813		152	60.0	236	697			2161	2153
300	398	820	797		119	29.1	198	683		1907	2160	2087
290	286	679	754		89.2		152	648	1290	1894	2136	1986
280	161	477	687	540	64.6		104	594	1283	1844	2070	1861
270	65.7	219	596	539	45.6		53.1	516	1246	1751	1963	1702
260			462	521	16.4			417	1178	1626	1831	1519
250			274	485				298	1084	1465	1631	1341
240			60.0	425				143	946	1281	1446	1143
230				335				12.4	807	1096	1240	990
220				161					643	875	982	848
210									477	698	794	726
200									348	540	625	616
190									240	427	487	519
180									175	335	389	439
170									137	274	320	373
160									112	223	267	315
150									103	190	231	266
140									94.9	169	204	231
130									87.0	156	183	213
120									71.4	148	169	202
110										127	127	97.2
100										12.4		

ELECTRON DENSITY

PUERTO RICO 60 W 19 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	B						
HMIN	111	110	110	110	115	110	240	232	224	224	234	215
HMAX	324	344	356	361	362	340	366	342	330	334	352	349
SHMAX	2162	2402	2392	2261	2250	1919	1417	1092	983	774	831	875
KM												
370				1907	1938		1756					
360			2000	1907	1937		1751				1240	
350		2128	1997	1895	1922		1720	1727			1240	1027
340		2126	1975	1863	1879	1846	1659	1726		1143	1221	1022
330	2294	2106	1934	1812	1824	1833	1565	1694	1556	1141	1176	1006
320	2290	2062	1869	1735	1756	1796	1457	1607	1537	1117	1104	978
310	2255	1987	1793	1646	1656	1714	1327	1495	1480	1063	1004	939
300	2180	1896	1690	1531	1531	1621	1175	1341	1383	987	875	891
290	2067	1786	1578	1407	1407	1523	1019	1162	1255	896	729	826
280	1907	1652	1459	1278	1269	1411	854	960	1096	794	573	745
270	1727	1501	1341	1155	1143	1291	661	716	917	679	389	643
260	1537	1341	1191	1035	1004	1157	477	446	698	551	219	529
250	1341	1182	1050	907	875	1027	286	198	446	375	104	389
240	1143	1035	917	804	764	903	12.4	71.4	198	198	49.6	229
230	946	886	804	698	670	754			60.0	60.0		104
220	781	754	698	616	587	631						44.9
210	655	661	608	547	521	524						
200	557	567	524	483	453	427						
190	471	495	453	417	395	344						
180	406	435	383	362	330	280						
170	351	378	325	305	276	232						
160	300	331	276	257	233	196						
150	259	290	236	198	198	169						
140	231	251	197	167	169	149						
130	212	217	178	155	153	136						
120	200	204	169	146	135	123						
110		127	143	49.6		12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 20 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							S	A				
HMIN	227	246	235	216	192	226	266	253	120	112	112	112
HMAX	329	338	310	275	242	390	367	327	269	288	306	313
SHMAX	487	515	380	298	94	143	104	279	734	1206	1748	1945
KM												
390						135						
380						134						
370						133	143					
360						130	143					
350						125	140					
340		824				119	135					
330	814	818				113	127	492				
320	804	797				105	117	490				2128
310	768	764	834			96.3	105	477			1907	2126
300	716	709	816			86.7	90.5	455			1901	2094
290	643	619	761			76.6	74.5	425		1473	1867	2020
280	549	508	670	716		66.7	55.8	373		1464	1802	1907
270	446	389	540	713		57.4	23.5	298	1143	1426	1701	1752
260	323	240	362	684		48.8		179	1126	1358	1570	1574
250	189	83.8	179	634	262	41.0			1065	1268	1431	1383
240	83.8		49.6	524	262	24.6			969	1131	1274	1208
230	30.9			348	251	7.2			848	1004	1096	1035
220				97.2	228				716	848	932	875
210					186				573	691	768	729
200					83.8				432	551	625	616
190									310	437	508	516
180									219	344	408	432
170									161	270	335	373
160									130	215	276	320
150									112	176	232	272
140									103	148	193	227
130									92.3	137	174	197
120									60.0	130	165	184

ELECTRON DENSITY

PUERTO RICO 60 W 20 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					A							
HMIN	112	114	113	112	113	110	240	216	238	248	249	227
HMAX	328	331	356	349	340	350	356	343	344	361	357	334
SHMAX	2168	2109	2518	2272	1976	1914	1346	1153	728	841	864	845
KM												
370										1265		
360			2032				1786			1265	1393	
350			2029	1938		1727	1781	1446	1215	1246	1384	
340		2032	2011	1930	1786	1718	1752	1445	1212	1196	1341	1367
330	2161	2032	1976	1903	1776	1693	1698	1428	1180	1115	1249	1365
320	2150	2015	1925	1858	1747	1651	1616	1389	1105	1004	1143	1335
310	2107	1970	1857	1793	1700	1591	1519	1326	1004	886	982	1274
300	2032	1897	1786	1705	1625	1514	1376	1248	875	742	814	1182
290	1918	1796	1679	1601	1536	1423	1201	1153	742	591	643	1050
280	1786	1669	1556	1483	1435	1308	982	1019	573	432	446	875
270	1620	1524	1407	1354	1316	1184	716	889	389	262	240	661
260	1462	1371	1269	1204	1197	1050	446	742	209	135	97.2	462
250	1274	1201	1107	1080	1080	917	161	591	90.5	54.8	12.4	262
240	1096	1035	960	932	960	794	12.4	389	21.7			97.2
230	932	875	834	807	834	667		179				30.9
220	774	754	726	691	704	562		49.6				
210	655	661	636	599	591	467						
200	565	573	567	521	487	380						
190	495	492	502	459	398	298						
180	437	425	442	408	327	235						
170	389	367	389	362	262	187						
160	344	318	335	315	222	152						
150	300	278	291	274	193	131						
140	258	243	251	237	168	116						
130	222	216	219	205	154	107						
120	204	200	204	187	145	99.4						
110						12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 21 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	227	242	226	222	198	238	302	137	109	110	107	112
HMAX	325	328	291	306	311	397	379	296	278	298	294	312
SHMAX	668	588	341	316	225	245	149	379	895	1488	1611	1884
KM												
400						229						
390						229						
380						227	262					
370						222	260					
360						215	251					
350						206	234					
340						197	213					
330	1167	1027				184	182					
320	1163	1020			323	171	143					2161
310	1131	988		557	323	156	97.2					2160
300	1065	939	794	554	318	140		608		1907	2128	2126
290	971	854	793	540	306	122		604		1893	2123	2043
280	834	716	773	513	288	106		583	1316	1839	2070	1907
270	661	540	716	472	265	88.8		544	1302	1739	1948	1727
260	477	348	619	408	234	71.4		485	1248	1604	1786	1537
250	262	143	477	327	198	51.7		408	1153	1425	1556	1341
240	104		286	219	164	12.4		310	1019	1191	1316	1159
230	30.9		71.4	83.8	127			219	861	982	1050	975
220					90.5			143	704	774	854	814
210					53.1			101	551	608	691	679
200					12.4			76.7	408	477	562	573
190								61.4	310	380	457	485
180								50.6	229	304	383	410
170								47.0	179	249	329	351
160								44.2	143	207	281	305
150								41.3	122	171	240	262
140								12.4	110	150	209	222
130									103	139	184	198
120									90.5	131	170	186
110									12.4	71.4	152	

ELECTRON DENSITY

PUERTO RICO 60 W 21 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A					A						
HMIN	110	110	113	113	110	114	253	219	218	224	252	227
HMAX	329	327	360	369	370	369	374	350	352	362	377	328
SHMAX	2182	2141	2404	2283	2266	2091	1507	1207	957	778	660	477
KM												
380							1876				875	
370				1816	1846	1969	1874			939	871	
360			1938	1809	1837	1960	1851		1215	938	854	
350			1929	1787	1810	1929	1801	1556	1215	929	822	
340			1905	1749	1760	1877	1726	1543	1201	907	777	
330	2227	2032	1864	1695	1695	1803	1623	1507	1167	870	716	794
320	2213	2025	1806	1616	1612	1701	1501	1446	1113	822	634	787
310	2167	1992	1723	1526	1516	1581	1341	1359	1041	761	540	762
300	2078	1930	1627	1425	1411	1446	1162	1251	950	679	446	716
290	1962	1830	1523	1319	1291	1298	960	1111	844	591	335	650
280	1816	1715	1407	1198	1182	1127	735	960	716	498	240	551
270	1631	1584	1278	1073	1061	960	477	794	591	398	135	446
260	1446	1446	1164	950	939	814	219	608	462	310	60.0	323
250	1257	1298	1035	844	820	667		417	335	209		189
240	1050	1157	907	745	716	551		219	198	112		83.8
230	861	1016	794	661	625	457		83.8	90.5	49.6		30.9
220	735	875	679	587	547	382		12.4	21.7			
210	634	754	591	521	483	316						
200	549	631	508	459	427	262						
190	477	532	441	403	375	211						
180	412	446	384	357	331	172						
170	356	383	335	314	286	141						
160	305	330	294	274	248	117						
150	259	286	254	232	212	100						
140	232	251	216	196	182	87.5						
130	215	226	194	175	160	79.3						
120	204	206	183	166	150	72.7						
110	97.2	161			97.2							

ELECTRON DENSITY

PUERTO RICO 60 W 22 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL				J	F	F						
HMIN	244	238	262	321	271	217	199	269	120	117	113	110
HMAX	346	330	362	390	394	348	365	385	328	303	306	315
SHMAX	503	340	344	230	408	366	246	355	1189	1598	2109	2171
KM												
400					492							
390				477	492			432				
380				468	485			431				
370			540	442	472		240	426				
360			540	398	451		240	416				
350	716		531	335	423	417	238	401				
340	714		511	262	386	416	233	380				
330	701	590	480	135	348	410	226	355	1240			
320	676	582	435		306	399	216	323	1235			2396
310	638	558	378		262	383	204	281	1213	2128	2571	2391
300	591	517	310		214	364	191	235	1174	2126	2562	2348
290	527	462	226		167	338	175	179	1119	2083	2503	2257
280	446	382	127		104	310	157	112	1050	1982	2385	2132
270	344	298	60.0			270	137	12.4	960	1838	2218	1969
260	229	189				229	117		854	1650	2007	1766
250	97.2	83.8				184	97.2		745	1446	1786	1556
240		21.7				132	80.7		643	1191	1528	1341
230						79.7	63.8		540	917	1265	1143
220						30.9	49.6		432	698	1004	917
210							31.8		344	524	774	742
200							4.1		270	408	608	596
190									214	329	477	492
180									168	268	389	417
170									135	223	316	357
160									114	187	267	310
150									99.8	157	226	270
140									92.8	141	190	233
130									87.2	133	173	201
120									12.4	112	163	188
110												127

ELECTRON DENSITY

PUERTO RICO 60 W 22 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B	B	A	A	A	A					
HMIN	110	110	110	110	107	113	227	233	240	236	239	252
HMAX	331	352	364	348	355	349	350	352	337	347	378	377
SHMAX	2139	2262	2398	2139	2139	1792	1184	1108	946	804	706	721
KM												
380											917	1004
370			1938								912	1000
360		1786	1936		1756			1528			889	978
350		1785	1919	1846	1754	1669	1583	1527		1050	844	936
340	2032	1775	1883	1838	1738	1662	1570	1509	1500	1046	787	881
330	2032	1748	1828	1809	1706	1637	1530	1465	1492	1027	716	802
320	2014	1707	1750	1749	1655	1595	1463	1385	1452	990	634	698
310	1966	1646	1657	1676	1589	1532	1370	1285	1374	939	540	585
300	1885	1571	1543	1576	1510	1454	1240	1167	1265	875	454	462
290	1773	1483	1420	1468	1415	1352	1096	1004	1127	794	362	335
280	1640	1383	1291	1341	1308	1250	932	834	946	691	278	198
270	1501	1274	1175	1218	1201	1107	754	643	716	585	189	97.2
260	1356	1155	1050	1115	1096	982	557	417	492	462	112	49.6
250	1201	1041	932	1013	982	854	348	219	240	323	60.0	
240	1035	939	820	903	865	729	161	71.4	12.4	127	5.5	
230	907	844	726	802	754	608	40.2					
220	794	754	643	707	661	498						
210	698	672	573	625	573	408						
200	608	594	513	540	485	329						
190	532	521	457	469	412	268						
180	459	454	406	403	351	219						
170	396	395	357	346	292	179						
160	344	341	314	300	248	143						
150	298	295	274	259	209	124						
140	259	255	233	226	177	111						
130	225	222	198	198	158	105						
120	206	208	188	186	150	99.4						
110	60.0	71.4	143	127	127							

ELECTRON DENSITY

PUERTO RICO 60 W 23 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	282	246	234	213		305	272	250	111	110	110	110
HMAX	371	314	320	305		439	405	304	294	295	308	330
SHMAX	596	482	436	320		343	412	382	1199	1592	2002	2456
KM												
440						403						
430						401						
420						393						
410						380	508					
400						365	507					
390						343	500					
380	1004					313	485					
370	1004					278	463					
360	990					240	435					
350	950					195	397					
340	883					156	351					
330	784					112	298					2355
320	667	1004	754			67.6	246					2339
310	524	1002	746	540		33.2	186	982			2327	2291
300	362	971	720	539			132	978	1697	2032	2313	2212
290	179	909	679	525			79.7	924	1694	2026	2253	2096
280		804	615	498			44.9	834	1653	1983	2146	1954
270		643	519	459				679	1567	1895	1996	1786
260		446	389	406				446	1446	1769	1806	1612
250		179	240	335				40.2	1260	1593	1601	1429
240			71.4	240					1096	1404	1383	1257
230				135					875	1175	1143	1127
220				54.8					643	939	939	990
210									477	716	754	848
200									344	540	596	704
190									248	408	485	573
180									189	327	396	467
170									147	262	335	382
160									122	219	286	320
150									108	182	245	274
140									97.2	159	210	237
130									91.6	142	184	204
120									86.1	134	169	189
110										49.6	71.4	143

ELECTRON DENSITY

PUERTO RICO 60 W 23 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			A	A			A	A		S		J
HMIN	108	110		115	112	111	246	218	216	237	253	245
HMAX	338	344		365	374	377	361	350	350	359	355	339
SHMAX	2510	2352		2371	2433	2587	1658	1392	1145	893	703	701
KM												
380					1938	2161						
370				1907	1936	2156	2000					
360				1904	1919	2133	2000			1191	1240	
350		2064		1887	1872	2092	1986	1756	1446	1180	1234	
340	2294	2062		1851	1814	2032	1948	1743	1435	1144	1185	1265
330	2284	2039		1798	1744	1953	1882	1704	1403	1077	1084	1249
320	2246	1979		1719	1658	1852	1802	1634	1348	993	950	1192
310	2178	1913		1627	1556	1739	1692	1545	1271	896	807	1096
300	2075	1816		1523	1435	1604	1556	1433	1175	794	661	960
290	1948	1704		1411	1316	1460	1394	1291	1061	679	508	794
280	1801	1581		1291	1197	1298	1201	1127	917	562	348	591
270	1652	1446		1175	1096	1143	982	939	754	457	179	403
260	1483	1316		1061	982	990	698	735	591	348	71.4	179
250	1324	1162		950	875	834	310	508	417	240		54.8
240	1159	1038		844	774	704		262	240	112		
230	1004	917		745	688	591		97.2	97.2			
220	875	804		652	615	500		26.3	40.2			
210	754	698		573	540	425						
200	661	599		502	477	367						
190	565	508		441	410	315						
180	485	432		383	348	270						
170	417	373		331	295	227						
160	356	320		290	249	189						
150	310	272		245	212	161						
140	267	234		205	186	142						
130	231	215		184	165	125						
120	210	206		127	149	115						
110	186	143										

ELECTRON DENSITY

PUERTO RICO 60 W 24 FE8 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							F					
HMIN	231	230	205	200	220	253	215	116	118	111	109	110
HMAX	321	306	269	274	352	384	373	298	292	288	299	317
SHMAX	641	543	296	171	197	173	220	442	1098	1306	1735	2010
KM												
390						198						
380						198	229					
370						196	229					
360					219	191	227					
350					219	184	223					
340					217	175	215					
330	1215				213	163	206					
320	1215				206	149	193					1907
310	1190	1096			197	132	179					1901
300	1124	1089			185	114	161	573	1446		2161	1875
290	1016	1050			171	93.4	141	569	1446	1727	2141	1826
280	854	978		348	156	73.5	121	553	1426	1714	2073	1747
270	679	854	716	347	136	53.8	101	524	1377	1660	1948	1646
260	492	679	705	336	115	30.9	82.1	482	1299	1573	1769	1531
250	240	446	664	313	92.8		65.7	425	1198	1446	1578	1407
240	83.8	198	591	278	69.1		51.1	362	1050	1274	1341	1278
230		12.4	446	226	47.2		37.7	298	861	1065	1096	1155
220			240	161	1.3		12.4	235	679	854	875	1019
210			49.6	71.4				179	524	661	716	889
200				3.1				137	375	519	585	735
190								107	278	398	485	585
180								85.7	214	310	403	467
170								70.5	168	251	335	378
160								61.8	138	207	281	320
150								55.8	118	170	237	272
140								50.6	107	149	209	231
130								41.2	100	138	182	198
120								12.4	83.8	129	167	186
110											60.0	83.8

ELECTRON DENSITY

PUERTO RICO 60 W 24 FEB 1959

T9ME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL							B	B				S
HMIN	112	117	110	112	113	117	250	240	215	208	202	260
HMAX	338	348	348	356	367	350	362	343	326	356	358	358
SHMAX	2181	2303	2367	2222	2103	1791	1394	1269	961	894	701	514
KM												
370					1727		1846					
360				1786	1722		1845			1004	875	754
350		2032	2000	1783	1702	1756	1825	1816		1002	870	750
340	1969	2024	1994	1765	1662	1743	1776	1814		989	852	731
330	1961	1992	1969	1731	1599	1704	1698	1790	1341	964	818	698
320	1931	1936	1924	1681	1528	1634	1589	1735	1337	925	771	650
310	1869	1846	1857	1604	1437	1545	1460	1648	1312	875	709	588
300	1793	1739	1786	1519	1341	1433	1291	1542	1265	810	634	508
290	1698	1612	1679	1425	1229	1303	1111	1394	1195	732	549	417
280	1570	1474	1556	1319	1119	1171	896	1191	1107	643	457	318
270	1431	1327	1416	1211	1004	1035	643	939	990	549	362	209
260	1283	1184	1269	1107	886	896	335	679	834	446	262	12.4
250	1111	1038	1127	993	781	768	12.4	310	661	353	179	
240	960	907	982	896	687	655		12.4	477	262	122	
230	824	804	848	794	608	551			240	179	77.6	
220	716	707	735	701	540	469			60.0	90.5	53.8	
210	629	625	643	616	482	400				26.3	32.2	
200	552	553	573	540	432	341						
190	513	489	502	465	380	286						
180	472	437	441	400	330	240						
170	426	389	389	341	282	203						
160	375	344	335	291	240	171						
150	331	307	291	248	205	146						
140	286	276	257	214	176	130						
130	236	248	233	194	156	120						
120	205	204	213	183	146	112						
110			12.4									

ELECTRON DENSITY

PUERTO RICO 60 W 25 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	J							J				
HMIN	231	243	226	285	337	377	352	120	118	110	110	110
HMAX	333	345	329	413	491	520	485	305	335	323	322	349
SHMAX	413	404	345	363	386	351	390	622	1246	1960	2176	2917
KM												
520						403						
510						400						
500					417	392						
490					417	377	446					
480					414	359	446					
470					406	338	440					
460					394	310	430					
450					375	274	413					
440					354	236	391					
430					326	195	364					
420				432	293	157	332					
410				431	255	119	294					
400				427	219	80.7	251					
390				417	179	52.2	207					
380				400	143	18.0	161					
370				380	112		112					
360				356	77.6		60.0					
350		643		325	49.6							2790
340	716	641		286	12.4				1265			2774
330	715	625	540	240					1263	2096	2396	2718
320	697	592	536	194					1245	2094	2395	2621
310	656	546	520	143				754	1209	2071	2362	2477
300	591	483	494	88.3				753	1156	2016	2280	2311
290	508	408	459	43.3				740	1086	1938	2145	2096
280	417	327	403					713	996	1834	1978	1887
270	310	229	335					674	896	1698	1786	1669
260	209	127	248					619	781	1537	1574	1468
250	104	54.8	143					549	670	1341	1341	1274
240	53.1		71.4					477	573	1111	1143	1080
230			26.3					396	485	917	975	932
220								310	408	716	820	807
210								235	335	551	691	688
200								179	280	437	573	591
190								135	227	355	465	508
180								104	189	295	410	432
170								83.8	156	249	346	373
160								69.5	132	209	294	327
150								60.0	117	176	251	286
140								55.8	108	154	219	253
130								51.7	101	140	195	222
120								12.4	71.4	132	179	200
110										40.2	40.2	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 25 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	111	112	116	117	116	118	240	234	224	241	255	270
HMAX	352	411	374	392	382	374	390	370	373	379	392	370
SHMAX	2834	3229	3332	3102	2915	2486	1649	1423	1245	969	943	724
KM												
420		2327										
410		2327										
400		2315		2465							1073	
390		2281		2465	2327		1846				1072	
380		2227	2753	2447	2327	2193	1837		1367	1215	1062	
370		2151	2751	2405	2312	2191	1811	1816	1366	1207	1038	1096
360	2500	2052	2726	2337	2274	2169	1767	1800	1354	1179	1000	1084
350	2500	1932	2672	2238	2215	2122	1706	1754	1325	1131	948	1050
340	2480	1799	2591	2118	2128	2049	1621	1678	1281	1065	882	992
330	2430	1669	2477	1976	2019	1941	1523	1567	1218	978	810	909
320	2339	1524	2339	1820	1893	1813	1411	1431	1143	875	726	807
310	2233	1381	2177	1652	1756	1682	1283	1274	1050	754	634	679
300	2103	1240	2014	1493	1612	1540	1155	1111	932	631	532	540
290	1942	1119	1838	1341	1474	1386	1019	939	814	508	437	389
280	1769	1013	1669	1191	1327	1240	861	735	591	389	323	219
270	1604	917	1493	1061	1191	1096	716	524	573	251	198	49.6
260	1431	826	1341	950	1073	960	524	310	446	152	90.5	
250	1274	754	1175	850	946	824	310	152	310	71.4		
240	1107	691	1035	762	834	707	12.4	54.8	161			
230	960	638	903	694	735	608			71.4			
220	834	588	781	631	657	516						
210	716	544	661	573	580	437						
200	616	504	565	508	508	368						
190	532	465	477	446	439	310						
180	454	426	406	389	362	258						
170	395	389	351	330	292	215						
160	341	347	302	286	240	176						
150	291	310	266	248	202	146						
140	253	277	235	219	175	129						
130	224	246	213	194	156	119						
120	205	223	198	180	146	104						

ELECTRON DENSITY

PUERTO RICO 60 W 26 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		S		F	F	F	F	F				
HMIN	231	228	211	217	281	434		112	110	110	110	110
HMAX	327	318	362	374	413	572		277	313	323	321	337
SHMAX	644	405	575	400	374	303		490	1271	2071	2296	3021
KM												
580						335						
570						335						
560						333						
550						326						
540						316						
530						302						
520						283						
510						260						
500						235						
490						207						
480						176						
470						143						
460						108						
450						68.6						
440						40.2						
430												
420					417							
410					417							
400					413							
390					405							
380				432	392							
370			540	431	373							
360			540	426	352							
350			537	415	326							
340			530	399	295							3018
330	1143		519	375	259					2161	2536	3007
320	1135	735	503	347	219				1393	2159	2536	2957
310	1096	728	483	316	175				1392	2136	2509	2865
300	1023	698	459	286	127				1377	2084	2440	2730
290	903	643	432	251	67.6				1343	2004	2307	2551
280	768	565	400	215				754	1289	1893	2161	2339
270	591	477	365	179				749	1216	1752	1969	2096
260	417	362	328	147				720	1131	1588	1747	1846
250	198	229	286	115				667	1016	1411	1537	1584
240	77.6	104	240	77.6				594	875	1216	1321	1341
230		26.3	186	47.7				516	735	1004	1143	1143
220			97.2	12.4				417	596	814	917	975
210								310	477	643	735	807
200								219	362	508	573	667
190								143	270	408	446	549
180								101	205	329	362	454
170								76.7	161	272	295	378
160								62.6	130	223	240	325
150								55.8	109	190	195	282
140								50.6	98.3	163	168	244
130								41.2	92.2	143	157	207
120								19.3	86.6	134	150	189
110									40.2	40.2	127	143

ELECTRON DENSITY

PUERTO RICO 60 W 26 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	110	110	110	109	115	112	230	240	226	245	250	236
HMAX	339	344	362	369	371	357	364	359	357	366	360	340
SHMAX	3000	2983	3340	2949	2652	2338	1773	1474	1323	1058	824	673
KM												
380					2396							
370			2790	2396	2396		2161			1316		
360			2790	2386	2376	2227	2158	2000	1612	1313	1143	
350		2979	2770	2352	2324	2219	2128	1986	1606	1294	1132	
340	2865	2975	2724	2294	2227	2183	2066	1936	1581	1259	1100	1050
330	2850	2933	2650	2199	2109	2109	1969	1841	1533	1204	1043	1038
320	2796	2835	2546	2090	1969	2019	1846	1721	1475	1143	969	1004
310	2703	2684	2415	1962	1803	1892	1685	1572	1394	1050	875	946
300	2571	2511	2260	1816	1631	1742	1512	1383	1278	928	774	865
290	2411	2294	2087	1669	1446	1588	1301	1167	1143	781	655	754
280	2218	2075	1907	1524	1274	1429	1111	939	960	631	508	631
270	2011	1834	1727	1371	1127	1257	896	698	774	462	362	487
260	1806	1578	1556	1226	990	1111	643	446	573	274	209	310
250	1601	1341	1376	1096	854	960	417	219	362	112	12.4	127
240	1383	1111	1208	971	745	814	198	12.4	179			44.9
230	1167	939	1050	854	661	679	12.4		49.6			
220	982	794	903	754	587	565						
210	814	688	768	665	527	469						
200	679	608	643	594	465	389						
190	562	540	549	527	406	316						
180	469	477	462	465	348	262						
170	406	423	400	396	292	215						
160	353	367	346	323	245	179						
150	310	318	303	272	205	152						
140	270	278	269	234	177	132						
130	229	240	235	206	157	121						
120	206	211	211	189	146	113						
110	40.2	60.0	161	143								

ELECTRON DENSITY

PUERTO RICO 60 W 27 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	240	250	246	234		232	236	244	110	110	107	110
HMAX	357	357	347	391		394	351	308	291	300	301	317
SHMAX	620	539	361	525		460	385	299	1261	1908	2137	2439
KM												
400				540		492						
390				540		492						
380				537		487						
370				528		477						
360	814	774		514		461	508					
350	811	770	608	494		438	508					
340	796	751	603	468		412	503					
330	768	716	580	437		381	490					
320	731	664	535	401		340	469					2571
310	673	601	477	357		295	443	716			2790	2561
300	608	524	410	310		249	405	695	1697	2465	2790	2511
290	529	437	335	262		198	357	650	1697	2438	2744	2418
280	437	344	255	215		152	305	562	1676	2355	2615	2294
270	335	251	179	170		108	246	446	1618	2210	2430	2118
260	229	143	90.5	119		76.4	186	310	1519	2032	2187	1907
250	104	12.4	40.2	75.6		53.8	104	127	1386	1786	1907	1669
240				40.2		32.2	44.9		1216	1501	1584	1446
230									1004	1216	1316	1240
220									794	960	1004	1050
210									591	735	794	875
200									432	562	625	729
190									318	437	508	616
180									240	353	417	516
170									187	291	348	439
160									152	245	291	368
150									129	209	248	315
140									114	179	213	270
130									106	160	185	235
120									98.7	148	171	213
110									40.2	60.0	161	161

ELECTRON DENSITY

PUERTO RICO 60 W 27 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B					A					
HMIN	110	115	110	110	110	112	112	222	227	238	269	254
HMAX	330	355	371	400	395	355	335	377	375	371	388	370
SHMAX	2399	2621	2694	2744	3156	2559	1952	1500	1222	853	967	1242
KM												
400				2000	2430							
390				1991	2428						1341	
380			2096	1964	2409			1612	1473	1215	1334	
370			2096	1918	2370			1607	1471	1215	1302	1556
360		2227	2083	1842	2313	2500		1583	1450	1199	1247	1546
350		2223	2051	1759	2236	2496		1536	1399	1156	1167	1518
340		2199	1988	1669	2139	2464	2161	1472	1346	1085	1061	1471
330	2294	2143	1914	1556	2032	2401	2157	1394	1265	982	932	1389
320	2278	2057	1823	1435	1892	2305	2126	1296	1164	861	781	1291
310	2230	1952	1715	1319	1742	2174	2065	1179	1035	742	625	1196
300	2149	1834	1601	1204	1588	2014	1969	1050	889	608	446	1111
290	2032	1698	1474	1096	1416	1826	1853	917	735	462	262	917
280	1892	1556	1341	982	1257	1631	1702	781	585	323	97.2	679
270	1742	1416	1212	883	1096	1446	1540	643	417	198	12.4	389
260	1574	1269	1073	794	960	1240	1362	492	251	112		143
250	1411	1143	960	716	834	1073	1162	362	135	60.0		
240	1240	1019	859	658	726	896	960	229	67.6	12.4		
230	1065	903	778	608	634	735	735	119	19.3			
220	917	794	706	562	560	596	524					
210	781	698	653	524	489	477	362					
200	667	608	598	485	432	389	240					
190	565	524	540	442	378	310	173					
180	477	454	477	401	331	246	127					
170	410	389	410	362	290	198	99.6					
160	346	335	346	315	249	161	83.8					
150	300	291	298	270	213	137	75.0					
140	259	254	259	229	185	124	68.7					
130	227	233	228	198	161	117	64.1					
120	208	219	207	184	149	108	58.9					
110	127		112	143	97.2							

ELECTRON DENSITY

PUERTO RICO 60 W 28 FEB 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A					B						
HMIN	225	233	216	186	195	292	303	126	109	105	109	109
HMAX	312	326	317	299	328	430	421	315	292	297	303	315
SHMAX	647	634	607	484	277	247	192	538	1289	1848	2057	2213
KM												
430						262	262					
420						261	262					
410						257	259					
400						250	251					
390						241	238					
380						228	221					
370						214	198					
360						197	171					
350						177	143					
340						155	112					
330		1119			310	129	81.3					
320	1215	1113	917		309	104	55.8	679				2536
310	1215	1079	913		304	77.6	30.9	677			2571	2529
300	1185	1012	892	661	296	44.9		664	1756	2430	2569	2477
290	1115	917	852	636	284			636	1755	2417	2522	2368
280	1004	794	799	638	267			598	1727	2349	2415	2218
270	854	625	716	608	248			540	1658	2220	2249	2011
260	698	417	616	564	227			477	1556	2050	2032	1786
250	477	198	498	508	204			403	1411	1810	1756	1556
240	219	65.7	362	471	174			327	1216	1556	1501	1301
230	60.0		198	403	146			255	982	1265	1240	1080
220			49.6	329	112			192	754	960	982	875
210				240	71.4			140	573	754	794	716
200				119	33.2			106	417	573	631	596
190				44.9				82.4	310	446	508	500
180								69.3	240	353	417	425
170								59.5	187	280	342	367
160								54.0	150	227	281	318
150								48.3	127	190	236	276
140								41.5	112	161	198	237
130								12.4	105	142	177	204
120									99.1	134	167	187
110									40.2	127	127	143

ELECTRON DENSITY

PUERTO RICO 60 W 28 FEB 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	B	B		B			B				S	
HMIN	107	110	114	108	110	110	226	230	235	206	248	274
HMAX	327	360	375	371	366	356	374	337	359	393	378	386
SHMAX	2346	2789	2895	2808	2524	2521	1918	1282	1243	1173	749	856
KM												
400										1096		
390										1095		1215
380			2362	2362			2128			1085	1191	1211
370			2358	2361	2362		2126			1062	1179	1187
360		2294	2333	2345	2355	2430	2105		1583	1027	1133	1141
350		2282	2283	2300	2313	2425	2059		1574	984	1050	1073
340		2248	2208	2214	2216	2392	1990	1907	1541	943	932	982
330	2227	2190	2102	2114	2096	2328	1895	1896	1484	848	794	861
320	2219	2105	1982	1990	1954	2227	1771	1846	1403	787	643	729
310	2183	2007	1838	1846	1801	2103	1626	1747	1303	716	508	573
300	2109	1876	1669	1685	1620	1954	1446	1612	1171	650	362	403
290	2019	1727	1509	1524	1446	1786	1260	1446	1019	580	229	219
280	1893	1584	1356	1371	1274	1604	1073	1240	854	508	143	71.4
270	1756	1429	1208	1224	1127	1425	854	1027	661	435	88.3	
260	1612	1269	1065	1084	982	1226	608	794	462	368	52.2	
250	1462	1111	939	960	854	1065	389	524	240	298	12.4	
240	1308	990	834	854	745	875	179	262	97.2	235		
230	1167	883	747	770	657	704	44.9	12.4		173		
220	1035	794	679	694	587	573				112		
210	854	716	619	629	521	457				44.9		
200	691	650	562	560	459	366						
190	540	573	508	485	400	294						
180	446	492	453	417	341	240						
170	375	410	395	355	286	203						
160	320	348	344	300	240	171						
150	272	298	300	256	207	149						
140	233	255	254	222	177	132						
130	204	222	215	197	157	121						
120	190	205	191	182	146	113						
110	179	127		112	40.2	12.4						

FEBRUARY 1959 - MAY 1952

Table 1

Washington, D.C. (38.7°N, 77.1°W) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.35	260					2.70
01		6.05	270					2.60
02		5.9	280					2.52
03		5.9	270					2.65
04		5.6	270					2.70
05		5.1	265					2.70
06		4.75	260					2.72
07		6.3	260		(131)	1.90		2.90
08		9.65	230		115	2.55		3.12
09		11.6	230		109	3.05		3.10
10		12.55	220		107	3.35		3.00
11		13.4	220		109	3.50		2.85
12	---	13.8	220		109	3.62		2.85
13	---	13.55	225		109	3.60		2.80
14		13.4	220		109	3.50		2.75
15		13.2	230		110	3.30		2.75
16		12.9	235		113	2.92		2.80
17		12.6	235		119	2.30		2.85
18		11.85	230		---	----		2.85
19		10.5	230					2.80
20		9.3	235					2.80
21		8.2	240					2.80
22		7.35	240					2.02
23		6.95	250					2.75

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Washington, D.C. (38.7°N, 77.1°W) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	265					2.80
01		5.6	270					2.75
02		5.5	265					2.80
03		5.4	265					2.75
04		5.0	260					2.80
05		4.8	260					2.75
06		4.6	260					2.90
07		5.0	250					2.90
08		9.0	230		121	2.30		3.15
09		11.3	230		115	2.90	2.9	3.05
10	---	13.2	230		111	3.25		3.00
11	---	14.0	230		111	3.50		2.90
12	---	13.9	225		111	3.60		2.85
13	---	13.4	225		111	3.55		2.75
14	---	13.4	230		113	3.40		2.75
15	---	13.2	240		115	3.20		2.75
16		13.0	235		119	2.65		2.75
17		12.6	235		(137)	1.95		2.80
18		11.5	230					2.85
19		10.1	230					2.85
20		8.5	230					2.85
21		7.5	245					2.80
22		7.2	255					2.80
23		6.5	250					2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Thule, Greenland (76.6°N, 68.7°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	260					----
01		(5.7)	250					----
02		(4.35)	260				3.5	----
03		(5.6)	250		---	---	3.5	----
04		(5.4)	260					(2.70)
05		(4.0)	260					----
06		---	250					----
07		(4.8)	260					(2.80)
08		---	260					----
09		(6.0)	250					----
10		(6.2)	245					(2.90)
11		(6.3)	240					(2.78)
12		---	250					----
13		(6.3)	250					(2.80)
14		(6.1)	240					----
15		(6.9)	240					----
16		(7.2)	250					(2.55)
17		(5.75)	250				1.7	(2.70)
18		(7.0)	250				1.7	(2.80)
19		(5.6)	250				4.0	(2.80)
20		---	250				3.5	----
21		(6.2)	245				1.3	(2.65)
22		(6.0)	260				2.0	(2.85)
23		(5.45)	250					(2.55)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Fletchers Ice I. (75.9°N, 124.3°W)* December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	(230)				2.4	
01		---	240				4.6	----
02		---	230				2.6	
03		---	240				2.2	----
04		---	230				2.0	
05		---	(230)				1.3	
06		---	245				1.8	
07		---	240				2.2	
08		---	240				1.7	----
09		---	230				2.0	----
10		---	230					
11		---	<230				1.7	
12		---	240					----
13		---	230				2.2	
14		---	230				2.2	----
15		---	240					----
16		---	230				2.1	
17		---	235				1.7	----
18		---	230				1.8	----
19		---	230				1.7	
20		---	240					----
21		---	<240					
22		---	230					----
23		---	240				2.3	

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Preliminary estimated average position.

Table 5

Point Barrow, Alaska (71.3°N, 156.8°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.4)	300				4.6	2.78
01		4.4	310				4.6	2.75
02		(4.2)	(320)				4.6	(2.70)
03		(4.4)	<285				4.2	(2.85)
04		>4.15	(300)				2.8	(2.70)
05		(4.35)	(355)				>2.6	(2.70)
06		(4.4)	(360)		---	---	2.8	2.55
07		(4.75)	(340)		---	---	3.2	(2.60)
08		>4.8	345		---	---	3.0	2.60
09		>5.05	310		---	---	2.3	2.70
10		(6.0)	290		---	---	2.9	2.80
11		(6.3)	280		---	---		2.85
12		7.35	270		---	---		2.90
13		8.3	275		---	---		2.95
14		9.65	255					2.95
15		9.9	245					2.90
16		(9.5)	250					3.00
17		8.0	250					2.95
18		6.0	260					2.90
19		(4.5)	290				2.1	2.80
20		4.5	290				2.5	2.85
21		4.85	280				3.0	2.90
22		4.2	295				2.9	2.85
23		(4.2)	(310)				4.1	(2.78)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Reykjavik, Iceland (64.1°N, 21.8°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.45	400					----
01		>5.4	360				3.7	(2.55)
02		(6.4)	380				2.7	----
03		>5.6	360					----
04		(5.2)	335					(2.70)
05		(5.4)	310					(2.70)
06		(4.9)	<320					(2.82)
07		(5.0)	<300					(2.85)
08		>4.4	300					2.75
09		5.85	275					2.85
10		8.4	250					2.95
11		10.9	240					3.00
12		(12.3)	240					(3.05)
13		>12.0	240					(3.08)
14		11.95	240					(3.10)
15		>10.65	250					(2.95)
16		(10.5)	255					(3.00)
17		(6.75)	260					(2.95)
18		(5.6)	300					(2.85)
19		(5.8)	310				2.2	----
20		>5.4	(320)					----
21		(5.35)	350					(2.85)
22		>5.1	350					(2.55)
23		>5.6	<400					----

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 7

St. John's, Newoundland (47.6°N, 52.7°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.7)	300					2.55
01		4.7	300					2.55
02		(4.8)	290					(2.60)
03		(4.8)	270					2.60
04		(3.9)	270					(2.70)
05		(4.1)	260					(2.70)
06		(3.9)	260					(2.72)
07		5.95	250		127	1.70		2.90
00		10.0	235		(121)	2.30	2.5	3.10
09		12.6	230		119	2.80		3.05
10		14.0	235		119	3.10		3.05
11		14.2	230		119	3.20		3.00
12		14.2	230		119	3.10		2.95
13		14.2	235		119	3.00		2.90
14		14.2	235		121	2.70		2.90
15		13.5	235		(132)	2.30		2.90
16		12.45	230		---	----		2.90
17		11.05	230					2.85
18		9.45	240					2.90
19		8.1	240					2.80
20		7.05	255					2.70
21		5.7	275					2.68
22		(5.0)	280					2.65
23		(4.9)	290					2.60

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	270					2.75
01		5.6	280					2.75
02		5.6	275					2.75
03		5.4	265					2.80
04		4.95	265					2.75
05		4.6	265					2.70
06		4.4	<270					2.88
07		5.6	255					2.95
00		9.3	230		121	2.50		3.15
09		11.9	230		121	2.90		3.10
10	---	13.5	230		119	3.30		3.02
11		14.25	230		119	3.40		3.00
12		14.0	230		119	3.50		2.95
13		13.6	230		119	3.40		2.85
14		13.3	235		119	3.15		2.80
15		13.2	240		119	2.80		2.80
16		12.8	235		---	----		2.85
17		11.85	230					2.85
18		10.3	230					2.85
19		9.2	235					2.90
20		7.85	240					2.85
21		6.7	250					2.80
22		6.45	270					2.75
23		5.8	260					2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

San Francisco, California (37.4°N, 122.2°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.6	(280)				2.8	2.70
01		3.6	<290				2.6	2.70
02		3.55	<290				2.1	2.70
03		3.5	<290					2.68
04		3.3	<300				2.0	2.60
05		3.3	<315				2.8	2.55
06		3.3	<310				2.3	2.70
07		5.0	<260				2.4	2.80
00		9.1	230		121	2.35		3.20
09	---	11.2	230		115	2.95		3.10
10	---	12.4	230		111	3.25		3.05
11	---	13.5	230		115	3.50		3.00
12		13.35	225		116	3.60		2.85
13		13.0	230		117	3.50		2.80
14		12.9	230		115	3.30		2.75
15		12.6	235		115	3.00		2.00
16		12.3	230		119	2.45		2.80
17		11.3	225		---	----	2.3	2.85
10		10.0	<230				2.6	2.90
19		8.05	<225				2.0	3.00
20		6.45	<230				2.1	3.00
21		4.5	<240					2.95
22		3.7	<260				2.3	2.85
23		3.65	<280				2.5	2.78

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

White Sands, New Mexico (32.3°N, 106.5°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.1	280					2.70
01		4.0	280					2.75
02		3.9	280					2.75
03		3.65	(280)					2.70
04		3.5	(300)					2.65
05		3.4	<320					2.55
06		3.6	300					2.70
07		6.5	255		<150	1.90		2.95
00		10.4	235		<118	2.70		3.15
09		12.2	230		111	3.20	3.2	3.15
10	---	12.95	230		109	3.45	3.8	2.98
11	---	13.65	225		112	3.70	4.0	2.85
12	---	13.5	230		115	3.80	3.9	2.80
13	---	13.0	230		<115	3.70	3.8	2.70
14	---	13.0	230		115	3.50	3.7	2.68
15	---	12.6	235		115	3.20	3.4	2.75
16		12.0	240		117	2.70	2.9	2.75
17		11.5	235		<145	1.95		2.85
18		9.8	230					2.80
19		8.6	240				3.0	2.85
20		7.0	235				2.5	2.95
21		5.5	245				3.1	2.95
22		4.5	<260				2.7	2.85
23		4.3	(265)					2.75

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Grand Bahama I. (26.6°N, 78.2°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.85	<255				2.4	2.92
01		5.45	250				2.5	3.00
02		4.8	240				1.9	2.98
03		4.3	<260				2.3	2.70
04		4.3	280				1.0	2.60
05		4.2	290				2.3	2.68
06		4.4	<270					2.82
07		7.2	250		<155	2.00	2.9	3.05
00		10.85	235		<112	2.05		3.20
09		12.15	230		<109	3.30	3.5	3.15
10		12.5	225		109	3.60	3.8	3.05
11		12.3	220		105	(3.80)	3.9	2.90
12		12.35	225		<106	3.90	4.0	2.75
13	---	12.3	225		(109)	3.80	4.0	2.70
14		12.0	230		<109	3.70	3.8	2.70
15		11.8	230		<111	3.40	3.5	2.65
16		11.5	235		(113)	2.90		2.75
17		11.2	240		<134	2.20	3.1	2.80
18		>10.0	220				3.1	2.85
19		8.4	235				2.0	2.80
20		7.7	250				3.0	2.85
21		7.3	250				3.0	2.80
22		6.9	245				2.1	2.90
23		6.4	250				2.6	2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Maui, Hawaii (20.8°N, 156.5°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	230					2.92
01		8.0	230					3.05
02		6.7	230					3.10
03		5.75	220					2.98
04		4.5	<235					2.60
05		4.3	270					2.45
06		4.3	<295					2.45
07		7.3	285		<135	1.95		2.85
00		11.7	250		113	2.80		3.05
09		14.85	240		109	3.35		3.10
10		14.9	230		109	3.70	3.8	3.00
11	---	14.9	220		107	3.88		2.80
12	(350)	15.0	220	(7.5)	107	3.98	4.2	2.70
13	(345)	15.5	225	---	107	3.98	4.1	2.70
14	350	15.5	235	7.2	107	3.88	4.0	2.65
15	(340)	15.1	240	---	109	3.60	3.8	2.65
16	---	14.85	240	---	(111)	3.20	3.0	2.70
17		14.2	240		<116	2.58	3.5	2.75
18		13.5	235				4.0	2.90
19		12.5	225				3.8	2.90
20		12.6	240				3.5	2.90
21		12.8	240				3.3	3.10
22		11.6	225				2.0	3.10
23		9.5	220				1.8	3.00

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Puerto Rico, W.I. (18.5°N, 67.2°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	250					3.00
01		6.7	240					3.10
02		5.3	225					3.22
03		4.2	230					3.00
04		4.0	(300)					2.55
05		4.1	(290)					2.65
06		4.4	270					2.05
07		7.2	260		---	2.00		3.10
08		11.3	240		117	2.02		3.15
09		13.2	240		111	3.30	3.4	3.15
10		13.2	230		111	3.65	3.7	3.10
11	---	12.3	225		111	3.85	4.0	2.95
12	---	11.6	220	---	110	4.00	4.3	2.75
13	(350)	12.1	220	---	111	3.95	4.1	2.70
14	---	11.8	240		111	3.85	4.1	2.70
15	---	11.4	240		115	3.65	3.8	2.65
16	---	10.8	240		<116	3.25	3.9	2.65
17		11.0	245		(120)	2.65	3.7	2.75
18		10.8	245				4.2	2.85
19		9.5	<250				3.8	2.80
20		8.7	260				2.7	2.75
21		8.4	(265)					2.90
22		8.2	255					2.95
23		7.6	245					2.95

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Baguio, P.I. (16.4°N, 120.6°E) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(11.8)	260					(2.80)
01		>11.0	250					(2.92)
02		>10.25	235					(3.00)
03		>7.55	230					2.90
04		6.4	250					2.80
05		6.0	250					2.85
06		5.95	280					2.68
07		10.2	200		<139	2.50		2.85
00		13.7	265		121	3.20		(2.88)
09		(15.5)	250		119	3.60		(2.80)
10		(15.1)	245		119	(3.90)		(2.55)
11	---	(15.0)	240	---	119	(4.00)		(2.25)
12	---	>14.0	235	---	119	(4.00)	4.4	(2.18)
13	---	(14.0)	240		119	(3.95)	4.2	(2.20)
14	---	(14.0)	245		119	3.80	4.0	(2.20)
15	---	(14.0)	250		117	3.60		(2.15)
16		>14.0	265		<125	3.05	3.4	(2.20)
17		>13.0	285		---	----		(2.30)
18		(12.4)	300					(2.30)
19		>12.0	340					(2.30)
20		(11.95)	335					(2.50)
21		>12.0	285					(2.60)
22		(11.9)	260					(2.68)
23		>11.5	250					(2.72)

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 15

Panama Canal Zone (9.4°N, 79.9°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.0	220					3.10
01		6.7	215					3.00
02		5.7	220					2.95
03		4.3	230					2.80
04		3.6	(295)					2.55
05		3.8	(305)					2.50
06		6.2	285					2.65
07		10.6	260		119	2.40		3.00
00		13.6	245		109	3.10	3.8	2.95
09	---	14.4	235		107	3.60	4.3	2.95
10	---	14.0	230		107	3.90	4.3	2.80
11	---	13.5	225		107	4.00	4.5	2.65
12	(420)	13.0	220	7.2	107	4.10	4.6	2.55
13	410	13.0	215	6.7	105	4.00	4.7	2.50
14	400	13.0	230	---	107	4.00	4.7	2.50
15	385	12.8	240		109	3.75	5.0	2.50
16	---	12.0	245		111	3.35	4.4	2.50
17	---	11.8	250		(113)	2.80	4.2	2.55
18		11.4	270		---	----	4.7	2.65
19		10.9	260				4.3	2.75
20		9.9	250				3.6	2.75
21		9.7	245					2.70
22		10.1	250					2.80
23		10.05	230					2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Chimbote, Peru (9.1°S, 78.6°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.85)	340				4.5	(2.35)
01		8.3	315				4.6	2.48
02		8.5	280				4.6	2.60
03		8.3	255				4.2	2.90
04		7.45	245				3.2	3.05
05		6.45	240				4.0	3.08
06		8.4	285		<149	1.08	3.6	2.00
07		11.5	255		119	2.80	3.5	2.80
00		13.1	240		117	3.50	5.8	2.70
09		13.9	230		117	3.90	5.0	2.50
10	---	14.1	220	---	115	4.10	7.0	2.32
11	---	14.0	220	---	117	(4.25)	7.9	2.10
12	---	13.8	220	---	117	(4.30)	8.1	2.02
13	---	13.1	<220	---	116	(4.30)	8.0	2.05
14	---	12.5	220	---	115	(4.15)	6.0	2.05
15	---	12.3	230	---	117	(4.00)	7.2	2.10
16		12.1	240		117	3.60	7.6	2.15
17		11.95	260		119	3.15	5.6	2.10
18		11.9	290		127	2.30	4.5	2.15
19		11.8	320				2.8	2.25
20		11.1	380					(2.10)
21		10.8	380					(2.10)
22		10.3	370				1.8	(2.20)
23		>9.15	360				2.3	(2.22)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Fletchers Ice I. (78.0°N, 122.9°W)* November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	(220)				1.8	----
01		---	220				1.7	
02		---	(220)				1.0	----
03		---	(215)				4.2	----
04		---	220				2.1	----
05		---	220				2.1	----
06		---	220				1.7	----
07		---	230				2.0	
00		---	225				1.7	----
09		---	220					----
10		---	220					
11		---	210					
12		---	220		---	---		
13		---	220		---	---	1.6	
14		---	220		---	---		
15		---	215		---	---		
16		---	220		---	---		----
17		---	220					
18		---	210					----
19		---	220					----
20		---	210					
21		---	220					
22		---	(220)					----
23		---	210				1.6	

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Preliminary estimated average position.

Table 18

San Francisco, California (37.4°N, 122.2°W) November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.15	<275				3.1	2.75
01		4.1	<285				2.7	2.70
02		4.2	<285				2.3	2.70
03		4.2	<280				2.1	2.70
04		4.1	<290				1.9	2.70
05		4.0	<295				2.0	2.65
06		4.2	<300				2.0	2.65
07		7.3	240		<135	1.82	2.3	3.10
00		11.0	230		114	2.62	2.7	3.20
09	---	12.9	220		109	3.15	3.3	3.15
10	---	13.8	220		109	3.40	3.5	3.05
11	---	14.5	225		109	3.55		2.95
12	---	14.3	225		(115)	3.65		2.85
13	---	14.3	225		111	3.60		2.80
14	---	14.2	230		113	3.40	3.6	2.80
15		13.9	235		(115)	3.00	3.6	2.80
16		13.8	230		<119	2.45	2.7	2.85
17		12.7	225				3.1	2.90
18		11.0	220				2.8	2.90
19		9.3	220				2.2	3.00
20		6.9	<225				2.5	3.00
21		5.6	<235				2.5	3.00
22		5.0	<265				2.4	2.90
23		4.2	<280				3.1	2.80

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

Godhavn, Greenland (69.3°N, 53.5°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.45)						(2.60)
01		(5.7)						(2.55)
02		(5.4)						(2.55)
03		(5.15)						----
04		(4.7)						(2.60)
05		(4.5)			---	----		(2.52)
06		(4.75)			---	----		(2.48)
07		(4.7)			115	----	3.4	(2.40)
00		(5.9)			113	1.05		(2.80)
09		(7.05)		---	114	2.25		(2.80)
10		(9.4)		---	111	2.65		(2.82)
11		(9.6)		---	111	2.75		(2.00)
12		(8.5)		(3.6)	109	2.70		2.00
13		(8.45)		---	111	2.60		(2.70)
14		(8.25)		---	113	2.45		(2.75)
15		(7.9)			113	2.40		(2.75)
16		(7.0)			117	2.10	2.4	(2.70)
17		(7.95)			<130	1.70	3.6	(2.70)
18		(8.3)			---	----	3.9	(2.70)
19		(7.6)			---	----		(2.62)
20		(7.8)			---	----		(2.60)
21		(7.0)						(2.60)
22		(6.8)						(2.65)
23		(6.45)						(2.60)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 20

Talara, Peru (4.6°S, 81.3°W) October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>11.85	230				3.6	(2.80)
01		10.05	230				3.1	2.80
02		9.9	230				2.3	2.90
03		8.8	230				3.5	3.00
04		7.9	230				2.9	3.10
05		6.7	240				3.4	3.15
06		6.7	265		---	----	3.9	2.05
07		11.1	250		115	2.75	4.1	2.95
00		13.0	240		111	3.40		2.85
09		15.1	225		109	3.85	4.1	2.70
10		15.15	215		109	4.15		2.45
11		15.5	215		109	4.30		2.25
12		15.5	210		109	4.35		2.05
13		14.9	<210		109	4.35		2.05
14		14.3	205		107	4.20		2.05
15		13.8	210		107	3.90		2.05
16		13.45	230		105	3.50	3.8	2.08
17		(13.45)	250		109	3.00	4.6	(2.15)
18		(13.1)	290		(145)	2.20	3.8	(2.15)
19		(13.0)	350					(2.15)
20		(12.95)	400					(2.10)
21		(12.9)	340				1.8	(2.20)
22		(12.8)	260				2.4	(2.50)
23		11.9	225				4.4	(2.65)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Brisbane, Australia (27.5°S, 152.9°E) June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.3	260					2.65
01		4.8	270					2.70
02		4.8	260					2.70
03		4.9	270					2.70
04		4.6	250					2.70
05		4.2	250					2.80
06		4.4	250		---	<1.60		2.80
07		8.2	230		140	2.15		3.15
00		10.6	230		120	2.80		3.20
09		11.7	230		120	3.30		3.15
10		12.0	230		120	3.50	3.5	3.05
11		11.8	230		120	3.70	4.0	2.90
12		11.8	220		120	3.70	4.0	2.85
13		>11.5	220		120	(3.70)	3.8	2.80
14		11.2	230		120	3.50	4.0	2.80
15		11.2	240		120	3.20	3.4	<2.85
16		10.7	240		120	2.70	2.8	2.80
17		10.5	240		---	<1.90	2.0	2.85
18		8.9	230		---	<1.60		2.80
19		7.6	240					2.80
20		6.6	250					2.80
21		6.3	250					2.75
22		5.6	250					2.70
23		5.0	250					2.70

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 22

Christchurch, New Zealand (43.6°S, 172.8°E) June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.3	300				<1.7	2.55
01		4.9	300				1.9	2.50
02		4.7	300				1.4	2.50
03		4.6	300				<1.5	2.55
04		4.7	280				<1.5	2.70
05		4.7	250				<1.5	2.75
06		4.3	260				<1.5	2.70
07		4.0	250				<1.5	2.70
00		6.4	250		130	1.8	2.0	3.10
09		8.9	250		130	2.5		3.10
10		10.4	250		120	2.9	3.0	3.15
11	---	11.6	250	---	115	3.0	3.2	3.05
12		11.6	250		125	3.2	3.5	3.00
13		11.6	240		---	3.2	3.6	3.00
14		11.3	250		---	3.1	3.2	2.95
15		>11.0	250		115	2.9	<3.0	2.90
16		11.4	250		130	2.5		2.90
17		10.6	250		---	---	<2.3	(2.90)
18		8.6	240				<1.8	2.85
19		7.9	250				<1.9	2.90
20		7.0	260				<1.7	2.80
21		5.9	260				<1.5	2.70
22		5.6	270				<1.5	2.60
23		5.3	270				<1.5	2.60

Time: 180.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 23

Campbell I. (52.5°S, 169.2°E) June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	300				3.2	2.55
01		4.6	300				2.8	2.55
02		4.6	290		---	---	>2.1	2.60
03		4.4	280		---	---	>2.1	2.60
04		4.4	260				>2.1	2.70
05		4.1	260				2.1	2 75
06		3.6	250		---	---	2.0	2.80
07		4.0	250		---	---	2.0	2.80
00		6.5	240		105	1.9	>2.1	3.10
09		9.0	230		105	2.4		3.15
10		10.5	230		105	2.7		3.10
11		11.5	230		110	2.9		3.00
12		12.2	230		110	2.9		(3.00)
13		11.6	230		110	2.8	3.0	(2.90)
14		12.1	240		105	2.6	<2.8	(2.95)
15		(8.8)	230		115	2.2		(2.95)
16		10.0	230		120	1.5	2.0	2.90
17		9.0	220				>2.1	2.90
18		7.1	230				2.4	2.90
19		6.0	260		---	2.4	2.4	2.80
20		5.7	270		---	---	2.4	2.70
21		5.5	260		---	---	2.5	2.65
22		4.9	280		---	---	2.5	2.60
23		4.7	300		---	---	3.6	2.60

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 24

Rarotonga I. (21.2°S, 159.8°W) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.8	250					2.70
01		6.9	250					2.80
02		7.2	250					2.90
03		5.8	230					2.90
04		4.6	250				<1.4	2.60
05		5.0	290					2.60
06		7.5	290		---	1.4	2.7	2.75
07		(12.6)	250		115	2.5	3.4	(3.00)
08		14.3	250		110	3.3	3.8	3.00
09		14.6	240		110	3.6		2.85
10		14.6	230		110	3.8		2.75
11	---	14.9	230		110	3.9	3.9	2.70
12	---	14.7	230		110	3.9	4.1	2.60
13	(360)	14.2	230		110	3.8	4.4	2.60
14	(390)	14.0	230	---	110	3.6	4.4	2.55
15	(350)	14.2	250		110	3.4	4.5	2.55
16		(14.5)	250		110	2.7	4.0	(2.60)
17		(14.7)	260		---	1.8	4.3	(2.65)
18		(14.3)	250				3.7	(2.65)
19		(13.4)	250				3.5	(2.60)
20		(11.6)	250				3.2	(2.70)
21		(9.2)	240				2.4	(2.60)
22		(8.7)	230					(2.60)
23		(8.2)	250					(2.60)

Time: 165.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 25

Tromso, Norway (69.7°N, 19.0°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.6)	380				3.2	(2.25)
01		---	---					
02		---	---					
03		---	---					
04		---	---					
05		---	---					----
06	---	6.3	(270)		120	2.50		2.50
07	---	7.2	255		110	2.80		2.50
08	---	8.1	250	----	110	3.05		2.55
09	(470)	8.2	250	5.50	110	3.20		2.40
10	(490)	8.5	245	5.50	110	3.30		2.40
11	(510)	9.0	245	5.45	110	3.40		2.40
12	(475)	8.7	245	5.35	110	3.40		2.40
13	(445)	8.7	245	5.40	110	3.40		2.50
14	(500)	8.7	245	4.80	110	3.30		2.55
15	---	8.1	250	----	115	3.20		2.55
16	---	7.5	250	----	110	3.00		2.60
17	(280)	7.4	260		110	2.90	>3.5	2.70
18	---	7.5	295		110	2.65	3.3	2.50
19		6.4	300		130	2.75	3.2	2.50
20		(6.4)	340		---	2.50	3.2	(2.35)
21		(6.2)	(335)		---	----	4.1	(2.30)
22		(5.7)	(395)		---	----	5.2	(2.30)
23		6.2	(360)				3.2	(2.30)

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 26

Baker Lake, Canada (64.3°N, 96.0°W) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.2	290		---	---	4.0	
01		6.0	290				4.0	----
02		6.0	290		---	---	3.6	
03		5.5	300		---	1.3	3.5	----
04		5.4	300		140	1.7	2.6	
05	---	5.2	300	---	130	2.0		----
06	(520)	5.5	280	3.8	115	2.4	3.6	----
07	500	5.7	250	4.2	110	2.7	3.2	(2.45)
08	540	6.0	240	4.6	110	3.0		(2.4)
09	500	6.0	250	4.5	110	3.3		(2.3)
10	560	6.0	250	4.8	110	3.5		G
11	530	6.2	250	5.0	110	3.8		----
12	520	6.6	240	5.0	110	3.7		(2.4)
13	480	7.2	240	5.2	110	3.6		----
14	500	7.5	240	5.0	110	3.5		(2.5)
15	480	7.1	240	5.0	110	3.4		----
16	500	6.7	250	4.8	110	3.2		----
17	470	6.3	240	4.5	110	3.0		----
18	(430)	6.1	270	4.2	110	2.6		----
19	---	6.0	290	---	120	2.3	2.6	----
20		6.0	300		130	2.0	4.0	
21		6.0	300		130	1.7	3.8	
22		6.0	290		---	---	4.6	
23		6.2	280				3.5	----

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 27

Nurmijarvi, Finland (60.5°N, 24.6°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.1					<1.8	2.40
01		6.1					<1.7	2.35
02		6.0					<1.7	2.40
03		5.3					<1.7	2.40
04		5.5					<1.7	2.55
05		5.6				---	<2.2	2.60
06		6.1				2.2		2.70
07		6.9		---		---		2.70
08		7.7		5.0		2.9		2.70
09		8.2		5.4		---		2.65
10		8.7		5.8		---		2.55
11		9.2		6.0		3.7		2.50
12		9.6		6.0		---		2.50
13		9.8		6.0		---		2.50
14		9.6		5.9		---		2.50
15		9.6		5.8		---		2.55
16		9.6		---		---		2.60
17		9.8				---		2.70
18		9.8				---		2.70
19		9.6				---		2.70
20		9.0					<2.4	2.70
21		8.5					<1.9	2.60
22		7.7					<1.8	2.50
23		6.6					<1.8	2.40

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 28

Oslo, Norway (60.0°N, 11.1°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.4	390					(2.30)
01		5.9	370		---	----		(2.30)
02		4.6	370		---	----		2.30
03		4.8	350		---	----		2.30
04		4.7	350		---	1.60		2.30
05		5.1	310		120	1.70		2.55
06		5.8	270		115	2.25		2.70
07	---	6.6	260	----	115	2.70		2.70
00	---	7.8	250	----	115	3.05		2.60
09	(420)	8.0	245	----	110	3.35		2.55
10	390	8.6	240	----	110	3.60		2.55
11	490	9.2	240	5.70	110	3.70		2.55
12	470	9.3	240	5.80	110	3.75		2.40
13	(460)	9.5	240	6.00	110	3.75		2.50
14	(450)	9.6	240	----	110	3.70		2.55
15	(490)	9.7	250	----	110	3.60		2.55
16	---	9.8	250	----	110	3.25		2.55
17		9.7	250		110	2.90		2.55
18		9.2	260		115	2.50		2.70
19		9.4	260		115	2.00		2.60
20		8.8	270		---	1.80		2.55
21		(7.0)	280					(2.55)
22		6.6	330					(2.35)
23		6.8	360					(2.25)

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 29

Winnipeg, Canada (49.9°N, 97.4°W) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	370				3.2	----
01		5.6	320				3.0	(2.70)
02		5.4	330				2.5	----
03		5.2	360		---	---	2.4	----
04		5.0	370		---	---	2.5	----
05		5.0	340		---	1.8	2.0	----
06		5.8	290		120	2.0		(2.85)
07	---	6.4	260	---	110	2.6		(2.85)
08	---	7.2	240	---	105	3.0		2.80
09	550	7.5	240	5.0	105	3.5		2.65
10	500	8.0	220	5.6	105	3.8		2.50
11	510	8.3	230	5.7	105	4.0		2.45
12	500	8.6	230	5.8	105	4.0		2.40
13	480	8.8	230	5.9	100	4.0		2.40
14	510	8.8	230	5.8	100	3.9		2.40
15	490	9.0	230	5.8	105	3.8		2.40
16	460	9.4	240	5.2	105	3.5		2.40
17	440	9.0	250	4.7	110	3.0		(2.50)
18	---	9.2	270	---	110	2.7		(2.70)
19		8.8	280		130	2.0		----
20		8.0	280		---	---	2.0	----
21		6.4	290				2.6	
22		5.9	300				2.0	
23		5.4	340				3.0	----

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Bunia, Belgian Congo (1.5°N, 30.2°E) April 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	>11.5					2.0	2.54
01	250	11.2					2.0	2.67
02	240	10.4					2.1	2.77
03	225	9.6					2.2	2.86
04	250	9.0			---	---	3.0	2.79
05	270	12.4	250	---	100	2.9	4.0	2.76
06	290	14.0	240	---	105	3.4	4.7	2.63
07	---	14.7	240	---	105	3.9	4.2	2.42
08	430	15.0	240	---	105	4.0		2.25
09	(460)	15.6	240	---	105	4.2		2.12
10	(500)	16.0	245	---	110	---		2.03
11	490	15.1	250	---	110	---		2.00
12	490	14.6	240	---	110	4.0		1.99
13	485	14.6	240	7.0	110	4.0		1.97
14	475	15.0	250	---	110	3.4	4.1	2.02
15	500	14.6	270	---	110	3.0	4.0	2.02
16	---	14.5	310	---			3.2	2.00
17	400	>14.3					2.8	1.90
18	390	----					2.0	----
19	320	----					2.3	
20	280	----					2.2	
21	250	----					2.6	----
22	250	13.6					3.0	2.55
23	240	12.0					3.0	2.54

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 31

Leopoldville, Belgian Congo (4.4°S, 15.2°E) April 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	225	16.5					1.8	2.63
01	220	13.6						2.60
02	225	11.5					1.8	2.58
03	235	9.6					2.0	2.60
04	230	7.9					2.5	2.68
05	260	8.1			---	---	2.6	2.61
06	265	11.6	250	---	110	2.9	3.8	2.64
07	290	13.4	240	---	105	3.5	4.2	2.57
08	315	14.0	240	---	110	4.0	5.0	2.45
09	370	14.3	240	---	110	4.0	4.0	2.32
10	400	15.1	240	---	110	4.2		2.23
11	410	16.0	250	---	110	---		2.22
12	420	16.4	250	---	110	---		2.17
13	440	15.9	245	7.0	110	4.0		2.11
14	450	16.0	240	---	110	3.8		2.07
15	440	16.0	250	---	110	3.3	4.4	2.09
16	400	16.2	265	---	110	2.8	3.9	2.13
17	(355)	16.4	300	---			3.4	2.16
18	340	16.3					3.2	2.18
19	330	----					2.4	----
20	260	----					2.1	----
21	240	----						----
22	230	17.4					1.7	<2.48
23	230	17.7						2.61

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 32

Elisabethville, Belgian Congo (11.6°S, 27.5°E) April 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	9.0						2.55
01	240	6.8						2.56
02	235	5.8						2.60
03	240	4.6						2.56
04	270	5.6					1.7	2.43
05	240	10.0	---	---	120	2.5	3.0	2.74
06	260	12.4	240	---	110	3.3	3.4	2.68
07	290	13.6	240	---	110	3.7	3.9	2.57
08	300	13.7	240	---	110	4.0		2.42
09	360	14.0	240	---	110	4.0		2.33
10	390	14.5	245	---	110	4.2		2.27
11	390	14.6	245	---	110	4.1		2.21
12	400	14.4	250	6.8	110	4.0	5.0	2.18
13	400	14.0	250	---	110	3.9	5.0	2.16
14	390	14.0	250	---	110	3.5	4.6	2.19
15	350	13.9	260	---	115	2.8	4.1	2.24
16	280	14.0	285	---	---	---	3.3	2.32
17	275	14.0					3.0	2.42
18	265	14.1					2.9	2.46
19	250	14.2					2.8	2.45
20	240	13.4					2.5	2.53
21	230	14.2						2.58
22	230	12.5						2.55
23	240	10.2						2.48

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 33

Townsville, Australia (19.3°S, 146.7°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.0	250					----
01		>7.0	250					----
02		>7.0	250					----
03		>7.0	245				2.0	(2.75)
04		>6.5	280					(2.55)
05		(6.4)	320				2.5	2.60
06		(7.5)	270		---	<1.50		----
07		>9.0	250		120	2.50		
00		>12.2	240		110	3.20	3.5	----
09		>14.0	240		110	3.65	4.0	(2.90)
10		(14.6)	240		110	3.80	4.0	(2.80)
11		14.5	230		110	3.95	4.3	(2.70)
12		(13.8)	230		110	4.10	4.4	2.50
13		(13.5)	230		110	4.00	4.5	(2.50)
14		>13.6	240		110	3.85	4.2	(2.45)
15		>13.0	240		110	3.70	4.0	(2.50)
16		>12.0	250		110	3.45	4.4	(2.50)
17		>10.0	250		110	2.80	3.8	
18		>9.0	270		---	2.10	3.5	
19		>8.0	(270)				3.6	
20		>7.0	(260)				3.4	
21		>7.0	280				3.0	----
22		>7.0	270				2.7	
23		>7.0	250				2.5	

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 34

Rarotonga I. (21.2°S, 159.8°W) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(9.2)	250					(2.70)
01		9.0	250					2.70
02		8.4	250					2.60
03		7.9	<260					2.60
04		7.8	280					2.50
05		7.9	300					2.55
06		(10.4)	290		---	1.7	2.8	(2.85)
07		(14.2)	250		110	2.8		(3.00)
08		15.1	250		110	3.4	3.5	2.90
09		15.8	240		110	3.7	3.8	2.80
10		15.8	240		110	4.0	4.3	2.65
11	---	15.4	230		110	4.1		2.60
12	400	15.8	230	---	110	4.1	4.4	2.50
13	400	16.0	240		110	4.0	4.6	2.50
14	400	15.8	250		110	3.8	4.5	2.45
15	(400)	(15.2)	250		110	3.5	4.0	(2.50)
16		(14.9)	250		110	3.0	3.9	(2.50)
17		(15.0)	280		---	2.0	3.6	(2.50)
18		(15.1)	290		---	---	3.2	(2.60)
19		(14.4)	270				3.5	(2.60)
20		(13.8)	260				3.4	(2.60)
21		(13.4)	250				2.8	(2.60)
22		(12.6)	250				2.4	(2.80)
23		(9.0)	250					----

Time: 165.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 35

Sao Paulo, Brazil (23.5°S, 46.5°W) April 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		14.8	240				<2.3	3.05
01		13.0	240				<2.3	3.00
02		>12.8	250				<2.2	2.95
03		11.1	250				<2.1	3.00
04		9.3	250				<2.1	2.00
05		7.1	<265				<2.1	2.75
06		6.9	270			----	<2.1	2.60
07		10.6	260			----		2.90
08		13.0	255			3.15		2.95
09		14.2	250			3.60		2.90
10		(14.5)	245			3.90		(2.85)
11		(14.6)	250	9.4		----		(2.70)
12	(440)	(14.6)	250	7.9		----		(2.50)
13	(460)	(14.6)	250	7.8		----		(2.50)
14	445	(14.8)	250	7.8		----		(2.50)
15	420	(14.9)	260	7.5		3.60		(2.60)
16	(410)	(14.8)	260	---		(3.50)	4.1	(2.60)
17		(15.0)	275			2.80	3.2	(2.60)
18		(14.8)	300				3.0	(2.65)
19		>14.0	335				2.4	(2.55)
20		(14.4)	350				<2.2	(2.50)
21		(14.8)	300				<2.2	(2.80)
22		(15.0)	260				<2.2	(2.90)
23		(15.2)	250				<2.2	(3.00)

Time: 45.0°W.
Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 36

Brisbane, Australia (27.5°S, 152.9°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	270					2.55
01		8.2	270				2.5	2.60
02		8.0	260					2.55
03		7.0	260					2.60
04		7.0	290					2.40
05		7.0	300					2.50
06		8.5	270		---	<2.00		2.80
07		>11.0	240		140	2.65	>2.6	(3.00)
08		>11.8	240		120	(3.20)		----
09		>12.0	230		120	(3.45)		----
10		>12.0	240		120	>3.40		----
11		>12.0	240		---	----		----
12		>12.0	230		---	----		----
13		>11.8	240		---	----		----
14		>11.8	240		120	>3.45		----
15		>11.5	240		130	>3.40		----
16		>11.2	240		130	3.00	3.4	----
17		>11.0	250		130	<2.40	2.7	----
18		>11.0	250		---	<2.10	2.2	2.75
19		(9.8)	260					2.70
20		>9.5	280					2.75
21		(9.1)	280					2.75
22		9.0	260					2.60
23		8.5	280					2.60

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 37

Canberra, Australia (35.3°S, 149.0°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.7	245				1.2	(2.75)
01		7.5	250				1.3	2.70
02		7.5	250				1.7	2.65
03		7.4	250				1.4	2.70
04		6.8	240				1.4	2.55
05		6.8	250					2.65
06		7.0	240		---	<1.60		2.80
07		>9.0	220		110	2.30		3.15
08		12.8	210		100	2.90	3.1	3.20
09		13.6	205		100	3.35	3.5	3.20
10		>13.8	200		100	3.65	3.8	(3.10)
11		>13.6	200		100	3.80	4.0	(3.00)
12		(13.7)	200		100	3.85		2.95
13		>13.5	<210		100	3.85		2.85
14		13.4	210		100	3.70		2.85
15		13.2	210		100	3.50		2.85
16		13.0	210		100	3.05	3.2	2.85
17		12.8	210		100	2.50	2.7	2.90
18		11.8	215		95	<1.60	2.6	2.90
19		10.4	220				2.2	2.85
20		>9.6	240					(2.90)
21		>9.0	235					(2.80)
22		>8.2	240					2.70
23		7.8	240					(2.75)

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 38

Christchurch, New Zealand (43.6°S, 172.8°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	290				<1.7	2.45
01		7.6	300				<1.5	2.45
02		7.5	290				<1.5	2.45
03		7.0	300				<1.3	2.40
04		6.7	290				<1.2	2.45
05		6.4	300				1.4	2.45
06		6.2	290				<1.5	2.40
07		7.0	290		---	1.7		2.70
08		9.5	250		110	2.5		2.90
09		12.0	250		105	3.0		2.90
10		13.9	240		100	3.4		2.80
11		14.2	240		100	3.6		2.75
12		14.1	240		100	3.6		2.80
13	---	14.0	240	---	100	3.7		2.75
14		14.0	250		100	3.6		2.70
15		13.4	250		100	3.4		2.70
16		13.1	250		105	3.0		2.70
17		12.8	250		115	2.5		2.75
18		12.0	250		---	1.7	(2.0)	2.75
19		10.8	250				<1.5	2.70
20		9.6	250				<1.5	2.60
21		9.0	250				<1.7	2.60
22		8.3	260				<1.7	2.50
23		7.7	280				<1.7	2.45

Time: 180.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 39

Cape Hallett (72.3°S, 170.3°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.0)	330		---	1.0		(2.30)
01		(3.5)	385		---	1.3		(2.15)
02		(3.6)	400		305	1.5		(2.20)
03		(4.4)	355		335	1.5		(2.40)
04		(3.9)	380		---	1.5	2.1	(2.30)
05		(4.4)	395		257	1.5		(2.30)
06		(6.7)	330		164	1.6		(2.40)
07		(7.3)	300		119	1.7		(2.60)
08	---	(7.2)	290	---	109	2.0		(2.65)
09	---	(7.8)	265	---	109	2.2		(2.65)
10	---	(7.8)	260	---	109	2.3		(2.85)
11	---	(8.4)	255	---	109	2.4		(2.80)
12	---	(8.6)	245	---	113	2.5		(2.75)
13	---	8.5	250	---	108	2.4	2.8	2.70
14	---	9.0	265	---	---	2.4	3.8	2.70
15		8.6	265		---	2.0	3.3	2.65
16		(8.6)	270		129	1.6		(2.60)
17		(9.5)	275		182	1.4		(2.60)
18		(9.7)	260		---	1.0		(2.50)
19		(9.6)	270		---	E		(2.50)
20		(8.5)	270		---	E		(2.45)
21		(10.0)	275		---	E		(2.55)
22		(8.4)	285		---	E		(2.55)
23		(5.2)	330		---	E		(2.25)

Time: 165.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Scott Base (77.8°S, 166.8°E) April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.7)	<340				<1.7	2.25
01		4.6	<350				<1.8	2.25
02		(4.5)	350				<2.0	2.20
03		(4.8)	<350				<1.8	(2.20)
04		5.2	300		---		<1.9	2.30
05		5.4	300		---		<1.8	2.30
06		6.0	<300		---		<1.6	2.50
07		5.8	<290		---		<2.0	2.50
08		6.8	270		---		<2.3	2.60
09		6.2	270		---		<2.2	2.65
10		7.6	250		---		<2.2	2.60
11		7.6	270		---		<2.7	2.60
12		8.0	(270)		---		<2.9	2.60
13		8.3	(290)		---		<2.9	2.60
14		8.0	(280)		---		<2.5	2.55
15		8.6	<290		---		<2.5	2.60
16		9.0	<290		---		<2.0	2.50
17		8.8	<290		---		<1.8	2.55
18		9.0	<300		---		<1.6	2.40
19		9.0	(300)		---		<1.6	2.40
20		9.0	<300		---		<1.8	2.45
21		8.7	<300		---		<1.7	2.50
22		6.9	<320				<1.8	2.40
23		(6.0)	(330)				<1.8	2.40

Time: 165.0°E.

Table 41

Lindau/Harz, Germany (51.6°N, 10.1°E) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.15	304					2.35
01		5.86	327					2.33
02		5.46	320					2.33
03		5.00	338					2.32
04		4.74	332					2.30
05		4.49	309					2.44
06		4.60	292		---	----		2.56
07		6.24	252		115	2.20	2.8	2.84
08		8.20	242		110	2.62	3.2	2.90
09		9.48	235		107	3.10	3.6	2.86
10	---	10.70	230	---	105	3.34	3.7	2.80
11	---	11.77	227	---	106	3.48	4.0	2.67
12	---	12.30	229	---	107	3.60	3.9	2.67
13	---	12.60	229	---	106	3.63		2.65
14		12.44	231		106	3.55		2.66
15		12.25	232		107	3.35		2.67
16		12.10	238		107	3.10		2.72
17		11.80	241		113	2.65	2.9	2.75
18		11.25	245		---	2.05	2.6	2.78
19		10.27	233					2.78
20		9.00	233					2.69
21		7.90	241					2.60
22		7.00	266					2.43
23		6.68	294					2.42

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 42

Winnipeg, Canada (49.9°N, 97.4°W) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.9	340				3.0	---
01		5.0	330				3.5	---
02		5.0	380				3.0	---
03		5.2	370				2.8	---
04		5.2	360				2.2	---
05		5.2	340					
06		5.4	310		---	---		
07		6.0	290		110	2.1		(2.9)
08		6.8	280		110	2.7		(3.0)
09		7.2	240		105	3.0		3.0
10	---	8.0	240	---	105	3.3		2.9
11	(590)	8.8	240	4.8	105	3.4		2.8
12	(380)	9.0	240	5.0	100	3.8		2.7
13	(590)	9.4	240	5.6	105	3.5		2.6
14	(500)	9.7	230	5.1	105	3.5		2.7
15	(470)	10.5	240	5.3	105	3.4		2.6
16	(430)	10.8	250	4.7	105	3.0		2.7
17	--	10.7	260	---	110	2.8		---
18		10.4	270		125	2.1		---
19		9.2	260		---	1.9		---
20		7.8	270					---
21		7.2	290					---
22		6.2	290				2.9	---
23		5.0	300				3.0	---

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 43

Ottawa, Canada (45.4°N, 75.9°W) March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	320					---
01		5.1	330					---
02		5.0	330				2.0	---
03		5.2	320					---
04		5.0	330					---
05		5.0	320					---
06		5.2	300		---	2.0		---
07		7.0	260	---	120	2.4		3.0
08		8.2	250	---	115	3.0		3.0
09	---	9.1	240	---	110	3.2		2.8
10	---	10.0	230	---	110	3.5		2.7
11	(400)	10.5	230	5.9	110	3.7		2.7
12	(310)	11.0	230	5.6	110	3.8		2.6
13	(400)	11.2	230	5.9	110	3.8		2.6
14	(420)	11.6	240	6.0	110	3.7		2.6
15	(410)	11.6	240	5.5	110	3.4		2.6
16	---	11.5	250	---	115	3.0		(2.65)
17	---	11.4	260	---	120	2.7		(2.7)
18		10.9	270		135	2.0		---
19		9.5	260		---	---		
20		0.2	270					---
21		7.1	300					---
22		6.2	310					---
23		5.0	310					---

Time: 75.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 44

Little America (78.2°S, 162.2°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(530)	(4.9)	280	(3.6)	103	----	2.8	(2.30)
01	(605)	(4.85)	275	(3.6)	103	(2.40)		(2.25)
02	G	(4.7)	280	(3.8)	101	(2.52)	2.8	(2.28)
03	G	4.9	290	(3.8)	101	2.70		2.30
04	---	(5.3)	280	(4.0)	101	2.90		2.38
05	(580)	5.8	270	4.4	101	(3.00)		2.40
06	480	6.2	260	(4.6)	(101)	(3.10)		2.40
07	505	6.7	250	(4.8)	101	(3.20)		2.30
00	505	7.35	250	(5.0)	101	3.30		2.30
09	510	6.9	245	(4.0)	101	3.35		2.30
10	540	6.4	240	(4.8)	101	3.40		2.25
11	(540)	(6.4)	240	4.9	101	(3.40)		(2.30)
12	560	6.6	240	(5.0)	101	3.45		2.25
13	525	(6.65)	240	(5.2)	101	3.35		(2.30)
14	(525)	(6.9)	245	(5.1)	101	(3.30)		2.30
15	(550)	(6.4)	240	4.9	101	(3.20)		2.25
16	(540)	(6.8)	240	4.6	(101)	(3.08)	4.0	(2.20)
17	(530)	(6.45)	260	(4.5)	101	(3.00)		(2.25)
18	(540)	(6.5)	250	(4.4)	101	(2.90)		(2.25)
19	480	6.6	270	(4.1)	101	(2.70)		2.30
20	485	(6.65)	280	(4.0)	101	(2.60)		(2.25)
21	500	(6.0)	290	(3.9)	103	(2.50)	2.6	(2.25)
22	530	(5.6)	295	(3.7)	107	(2.50)		(2.30)
23	(580)	(5.45)	290	(3.6)	103	----	2.6	(2.20)

Time: 165.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 45

Little America (78.2°S, 162.2°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	(5.0)	(335)		---	----	2.5	(2.38)
01	---	(4.7)	<340		109	----	2.8	(2.40)
02	---	(4.5)	330		109	----	2.6	(2.48)
03	---	(4.85)	<330		105	----	2.9	(2.50)
04	---	(5.6)	305	---	103	(2.70)		(2.60)
05	---	(5.8)	280	---	105	2.82		(2.60)
06	---	6.95	265	---	<105	2.82		2.60
07	(465)	7.9	255	---	101	2.85		2.60
00	(470)	8.1	250	4.6	101	3.00		2.50
09	(430)	7.6	250	(4.8)	101	2.98		2.50
10	(460)	(7.65)	240	4.8	101	3.10		2.60
11	(515)	(7.55)	250	(4.8)	101	3.15		2.50
12	(445)	(7.4)	245	5.0	101	3.18		(2.60)
13	---	(7.5)	240	(5.1)	101	3.15		(2.60)
14	(455)	(7.8)	240	(4.8)	101	3.05		(2.58)
15	460	(7.8)	250	(4.7)	101	2.98	3.3	(2.45)
16	440	(8.0)	260	4.5	101	(2.80)	2.9	(2.40)
17	(450)	(7.65)	<270	(4.4)	103	(2.70)	2.8	(2.35)
18	(425)	(7.6)	280	(4.3)	103	(2.40)	2.6	(2.40)
19	---	(7.8)	290		106	(2.22)		(2.40)
20	---	(7.8)	310		109	(2.12)		(2.40)
21	---	(7.0)	310		109	----		(2.40)
22	(410)	(5.75)	335	---	113	----	1.8	(2.30)
23	---	(5.0)	(340)		124	(1.80)	2.5	(2.30)

Time: 165.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 46

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.1	300				<1.6	2.55
01		5.6	310					2.50
02		5.2	320					2.45
03		4.9	330					2.50
04		4.9	320			----		2.50
05		5.7	300			2.00		2.65
06	(350)	6.5	270	(4.1)		2.50		2.70
07	360	6.8	260	(4.6)		2.90		2.60
08	380	7.2	240	5.0		3.20	3.9	2.65
09	380	7.6	240	5.2		3.40	4.0	2.60
10	390	8.1	240	5.4		3.50	4.5	2.60
11	380	8.3	240	5.4		3.60	4.2	2.60
12	370	8.4	240	5.4		3.70	4.1	2.60
13	370	8.4	240	5.5		3.70	3.9	2.60
14	380	8.2	240	(5.3)		3.60		2.65
15	350	8.1	240	(5.2)		3.50		2.70
16	(380)	8.0	250	(5.0)		3.30		2.70
17	(320)	7.7	260	---		3.00		2.75
18	---	7.9	270	---		2.60		2.75
19		7.8	280			2.10	2.2	2.80
20		7.6	280			----	2.8	2.75
21		7.3	280				2.4	2.70
22		7.0	280					2.65
23		6.5	300					2.60

Time: 60.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 10 minutes, manual operation.

Table 47

Monte Capellino, Italy (44.6°N, 9.0°E) August 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		7.3						
01		7.2						
02		7.0						
03		6.6						
04		6.0						
05		5.6						
06		6.7				2.1		
07		7.8				2.9		
08		8.6				3.3		
09		8.5				3.6		
10		8.9				3.8		
11		9.5				3.8		
12		9.4				3.9		
13		9.4				3.8		
14		9.2				3.8		
15		9.2				3.8		
16		8.7				3.6		
17		8.8				3.3		
18		8.6				2.8		
19		8.8				2.2		
20		8.9						
21		(8.4)						
22		7.4						
23		7.4						

Time: 15.0°E.

Table 48

Delhi, India (28.6°N, 77.2°E) August 1957

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	400	8.5						2.60
01	400	8.1						2.60
02	(400)	>7.2						(2.60)
03								
04	360	>6.9						2.80
05	360	6.9						2.80
06	320	7.9						3.00
07	320	9.3						3.00
08	320	9.6						3.00
09	360	>10.5						2.80
10	400	11.3						2.60
11	420	12.3						2.50
12	400	13.2						2.60
13	400	13.8						2.60
14	400	14.1						2.60
15	380	14.1						2.70
16	360	14.0						2.80
17	360	14.0						2.80
18	340	13.0						2.90
19	360	11.8						2.80
20	360	>10.3						2.80
21	380	9.4						2.70
22	400	>9.0						2.60
23	400	>8.7						2.60

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation
*Height at 0.83 foF2.

Table 49

Ahmedabad, India (23.0°N, 72.5°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	300				1.8	2.55
01		9.7	290				2.2	2.65
02		8.6	265					2.75
03		7.6	255					2.75
04		7.4	250				1.2	2.75
05		6.7	250				1.6	2.75
06		7.3	260		---	1.7	2.1	2.95
07	250	9.1	250	4.6	110	2.6	3.0	3.15
08	255	9.7	230	5.0	107	3.3	3.4	2.95
09	270	10.5	215	5.1	105	3.7	3.8	2.70
10	350	11.2	200	5.6	105	4.0	4.2	2.45
11	385	12.8	(205)	6.0	105	4.2		2.40
12	375	13.9	---	6.0	105	---		2.45
13	400	15.0	(225)	6.0	105	---	3.8	2.45
14	380	15.3	225	6.0	105	4.2		2.50
15	365	15.3	230	6.0	105	4.0		2.50
16	345	15.5	240	5.8	107	3.6		2.55
17	320	15.2	250	5.3	110	3.1		2.60
18	280	14.8	260	4.5	120	2.4	3.0	2.70
19		14.2	275				3.0	2.70
20		13.4	285				2.0	2.60
21		12.7	285				1.5	2.50
22		11.8	300					2.50
23		10.5	300				1.8	2.50

Time: 75.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 50

Calcutta, India (22.9°N, 88.5°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.8	280					3.3
01		12.0	260					3.4
02		10.2	250					3.5
03		8.1	250					3.35
04		7.7	250					3.3
05		7.0	250				2.0	3.3
06	---	7.8	250	---	120	2.3		3.5
07	---	10.0	240	---	110	3.0	3.6	3.6
08	(290)	10.2	230	4.6	105	3.5	4.1	3.6
09	(320)	11.1	240	5.8	105	3.7	4.5	3.2
10	350	12.3	225	6.4	105	3.9	4.5	2.9
11	400	0	225	6.5	105	4.0	4.1	(2.9)
12	405	0	220	6.5	105	4.2		---
13	400	0	220	6.6	100	4.1		
14	400	0	225	6.5	100	3.9	4.0	
15	395	0	230	6.5	105	3.8	4.2	---
16	350	0	240	6.1	100	3.6	4.5	---
17	330	0	250	5.8	105	3.2	4.3	(3.1)
18	---	0	250	---	110	2.6	3.6	(3.2)
19		0	290		---	1.5	2.1	(3.15)
20		0	300					(3.1)
21		0	290					3.25
22		0	300					3.1
23		13.0	300					3.3

Time: 90.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 51

Bombay, India (19.0°N, 73.0°E) August 1957

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	280	7.2						3.25
07	300	8.8						3.10
08	360	10.4						2.80
09	360	10.8						2.80
10	430	11.5						2.50
11	460	12.7						2.40
12	470	13.1						2.35
13	480	13.6						2.30
14	480	13.8						2.30
15	460	14.0						2.40
16	440	13.6						2.45
17	420	12.8						2.50
18	400	12.0						2.60
19	400	12.0						2.60
20	(360)	(11.4)						(2.80)
21	340	9.8						2.90
22	350	9.5						2.85
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 52

Madras, India (13.1°N, 80.3°E) August 1957

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	<12.9						----
01	(310)	>11.7						(3.05)
02	(320)	<10.0						(3.00)
03	(320)	<8.1						(3.00)
04	290	(7.0)						3.10
05	300	<5.9						3.10
06	320	8.2						3.00
07	350	10.9						2.85
08	420	11.9						2.50
09	480	12.2						2.30
10	500	11.6						2.25
11	500	11.5						2.25
12	520	11.4						2.20
13	560	11.9						2.10
14	540	12.0						2.15
15	520	12.0						2.20
16	500	12.1						2.25
17	490	12.2						2.25
18	(480)	<12.1						(2.30)
19	600	11.7						(2.00)
20	---	<10.6						----
21	---	<11.3						----
22	---	<12.1						----
23	(440)	<12.4						(2.60)

Time: 75.0°E.
Sweep: 0.75 Mc to 21.5 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 53

Tiruchy, India (10.8°N, 78.8°E) August 1957

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	----						----
01	(360)	(9.4)						(2.80)
02	(360)	(8.9)						(2.80)
03	(350)	(8.4)						(2.85)
04	320	7.3						3.00
05	280	5.3						3.25
06	320	8.1						3.00
07	360	10.6						2.80
08	440	11.6						2.45
09	480	11.6						2.30
10	520	11.2						2.20
11	520	11.0						2.20
12	560	11.0						2.10
13	560	10.9						2.10
14	560	11.1						2.10
15	560	11.0						2.10
16	520	11.2						2.20
17	520	11.2						2.20
18	520	11.1						2.20
19	520	10.4						2.20
20	---	----						----
21	---	----						----
22	---	----						----
23	(440)	(10.2)						(2.45)

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 54

Kodaikanal, India (10.2°N, 77.5°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(10.7)	290					(2.65)
01		(10.2)	260					2.95
02		(8.9)	240					<3.05
03		8.4	240					<3.05
04		(7.2)	230					(3.10)
05		4.8	225					3.30
06		7.0	265		120	2.0		3.05
07		10.2	240		110	>2.9	7.8	2.95
08		11.4	220		105	---	11.0	2.65
09		11.7	215		100	---	11.5	2.35
10		11.2	205		---	---	12.4	2.20
11		10.9	200		---	---	12.4	2.25
12		10.8	200		---	---	12.2	2.20
13	---	10.8	200		---	---	12.2	2.20
14	---	10.8	205		---	---	12.2	2.15
15	---	10.8	220		---	---	12.0	2.15
16	---	11.2	230		---	---	10.3	2.25
17	---	>11.5	250		115	2.9	8.5	2.30
18		11.6	285		---	---	3.8	2.30
19		10.8	380					2.15
20		(10.2)	(390)					(2.20)
21		----	(360)					----
22		(10.2)	(370)					(2.40)
23		(10.2)	325					(2.45)

Time: 75.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 55

Trivandrum, India (8.5°N, 77.0°E) August 1957

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	----						----
01	---	----						----
02	---	----						----
03	---	----						----
04	(280)	(6.9)						(3.25)
05	280	4.7						3.25
06	300	7.1						3.10
07	320	10.5						3.00
08	380	12.0						2.70
09	440	12.6						2.45
10	480	11.8						2.30
11	480	11.3						2.30
12	500	11.2						2.25
13	520	11.0						2.20
14	520	10.9						2.20
15	520	11.1						2.20
16	500	11.2						2.25
17	480	>11.3						2.30
18	---	>11.1						----
19	---	>10.6						----
20	---	----						----
21	---	----						----
22	---	----						----
23	---	----						----

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 56

Tucuman, Argentina (26.9°S, 65.4°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.1	230					3.10
01		11.3	230					3.10
02		9.3	230					3.10
03		7.8	240					3.10
04		6.2	220					3.00
05		5.2	250					2.80
06		4.8	260					2.90
07		7.2	260		147	(2.00)		3.10
08	---	9.8	240		111	(2.80)		3.20
09	(250)	11.4	225		111	(3.30)		3.10
10	275	12.8	220	---	111	(3.60)		3.10
11	(285)	13.1	205	---	111	----		3.10
12	---	13.2	200	---	111	----		3.00
13	(340)	13.3	205	(6.8)	107	(4.00)		2.80
14	370	14.0	200	6.1	111	(3.80)		(2.80)
15	355	(14.2)	200	(6.1)	111	(3.60)		(2.70)
16	---	(14.4)	225	---	111	(3.30)		(2.80)
17		(14.1)	250		111	(2.70)		(2.90)
18		(13.9)	260		---	(2.00)		(2.90)
19		(13.2)	260					(2.80)
20		12.9	250					(2.80)
21		(13.2)	235					(2.85)
22		(13.1)	230					(2.95)
23		(12.8)	235					3.05

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 57

Macquarie I. (54.5°S, 159.0°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	280				3.0	2.6
01		4.5	300				3.4	(2.7)
02		3.8	290				3.7	2.65
03		3.8	280				1.3	2.7
04		3.8	260				1.5	2.7
05		3.5	250					2.7
06		3.9	260		---	---		2.8
07		5.6	240		120	1.9		2.9
00		7.4	240		110	2.5		3.0
09		8.2	230		110	3.0		2.9
10		9.2	230		110	3.1		2.9
11		>10.0	230		110	3.2		2.8
12		9.6	220		110	3.2		2.9
13		>10.0	230		110	3.0		2.85
14		>10.0	230		110	2.9		2.9
15		>9.5	240		110	2.6		2.95
16		9.0	240		---	2.0		2.9
17		>8.5	230		---	E		(2.9)
18		7.8	240					2.8
19		7.4	250				1.8	2.8
20		6.9	250				2.2	2.8
21		6.2	250				3.2	2.7
22		5.4	270				2.8	(2.6)
23		5.1	290				3.3	2.55

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 58

Oecepcion I. (63.0°S, 60.7°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.6	295					3.0
01		3.3	300					2.9
02		3.2	300					3.0
03		3.2	300					3.0
04		3.0	295					3.0
05		3.1	290					3.05
06		3.0	250					3.2
07	---	3.1	200	---	---	E		3.6
08	---	4.1	190	---	---	E		3.65
09	---	6.9	170	---	---	E		3.8
10	---	8.2	160	---	---	E		3.85
11	---	9.2	170	---	---	2.7		3.8
12	---	9.8	160	---	---	---		3.8
13	---	10.0	170	---	---	---		3.85
14	---	9.5	170	---	---	---		3.8
15	---	8.9	170	---	---	---		3.95
16	---	8.9	170	---	---	E		3.85
17		7.4	170		---	E		3.8
18		6.7	170		---	---		3.8
19		4.9	180					3.7
20		4.0	200					3.5
21		3.7	240					3.2
22		3.8	270					3.1
23		3.6	285					3.0

Time: 60.0°W.
Sweep: 1.5 Mc to 18.0 Mc in 30 seconds.

Table 59

Port Lockroy (64.8°S, 63.5°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	345				1.1	2.45
01		3.1	340		---	---		2.30
02		3.1	340		---	---		2.30
03		2.9	340		---	---		2.35
04		3.0	325					2.45
05		3.0	310		---	---	1.0	2.50
06		2.7	290		---	---	1.0	2.70
07		3.4	260		175	1.2		2.70
00		5.7	225		150	1.6		3.15
09		7.6	220		---	2.0		3.35
10		8.8	215		130	2.6		3.40
11		8.6	215		---	2.6	2.9	3.30
12		9.8	225		120	2.8		3.30
13		9.2	220		120	2.7		3.35
14		9.0	220		---	2.6		3.35
15		8.4	220		140	2.3		3.40
16		7.8	225		150	1.9		3.30
17		7.4	220		---	1.6	1.6	3.30
18		5.8	215		---	---	1.2	3.30
19		4.2	220		---	---	1.1	2.90
20		4.0	255		---	---	1.2	2.65
21		3.8	300		---	---	1.0	2.50
22		3.7	340		---	---	0.9	2.45
23		3.4	350				1.0	2.40

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 60

Wilkes Station (66.2°S, 110.5°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.8)	240				1.9	(3.00)
01		(3.6)	240				1.9	(2.95)
02		(3.4)	240				(2.1)	(2.98)
03		(3.9)	240				(2.6)	(2.85)
04		(3.4)	260				(2.4)	(2.82)
05		(4.0)	260				(3.1)	(2.80)
06		(4.0)	260				(2.1)	(2.85)
07		(4.5)	245		---	----	(2.4)	(2.80)
00		(5.5)	250		112	(1.95)	(2.1)	(2.80)
09		(6.35)	240		113	(2.15)	2.4	(2.90)
10		7.0	250	---	(118)	(2.50)		2.80
11	(430)	(7.2)	250	(4.0)	113	(2.50)	2.5	(2.72)
12	(350)	(7.6)	250	(3.8)	117	(2.60)	2.7	(2.70)
13	(350)	(7.4)	255	---	115	(2.50)	2.8	(2.70)
14	---	(7.2)	250	---	119	(2.05)	2.7	(2.85)
15	---	(6.6)	255	---	111	(1.00)	(2.1)	(2.88)
16	---	(7.05)	(255)	---	115	----	1.7	(2.85)
17		(5.05)	250				(2.0)	(2.95)
18		(6.1)	255				4.2	(2.70)
19		(5.5)	260				(3.4)	(2.75)
20		(5.0)	255				(3.4)	(2.95)
21		(4.0)	260				(3.2)	(2.90)
22		(3.9)	<260				(2.5)	(2.88)
23		(3.8)	250				(1.9)	(2.90)

Time: 105.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 61

Wilkes Station (66.2°S, 110.5°E) — July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.95)	240				(3.2)	(2.95)
01		(3.6)	<255				1.8	(2.95)
02		(3.45)	240				1.9	(3.00)
03		(3.5)	240				2.0	(2.88)
04		(3.25)	250				2.0	(2.90)
05		(3.3)	260				(1.0)	(2.70)
06		(3.4)	(260)				2.0	(2.85)
07		(3.8)	245				(2.0)	(2.80)
08		(4.45)	230		---	----	(2.8)	(2.80)
09		(5.65)	245		112	(1.60)	2.0	(2.80)
10		(7.1)	240		(115)	1.85	2.2	(2.85)
11		(7.7)	240		111	(2.00)	2.5	(2.80)
12		(7.8)	250		117	----	(2.6)	(2.80)
13		(7.6)	260		111	----	(2.7)	(2.75)
14		(7.2)	260		109	(1.70)	(2.5)	(2.90)
15		(7.25)	250		---	----	(2.1)	(2.85)
16	---	(7.05)	260				(5.1)	(2.75)
17		(7.0)	<200				(3.9)	(2.95)
18		(6.0)	255				(2.6)	(2.85)
19		(5.2)	250				(4.6)	(2.95)
20		(4.85)	265				(4.7)	(2.02)
21		(4.5)	255				(2.1)	(2.85)
22		(4.0)	250				(3.7)	(2.80)
23		(3.95)	250				(3.8)	(2.90)

Time: 105.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 62

Little America (78.2°S, 162.2°W) — July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.4)	280		---	---	1.6	(2.55)
01		(4.6)	280		---	---	1.6	(2.80)
02		(4.45)	275		---	---	2.5	(2.80)
03		(4.5)	260		---	---	2.8	(2.90)
04		(4.8)	285		---	---	2.8	(3.00)
05		(4.0)	260		---	---	2.5	(3.02)
06		(3.95)	290		---	---	1.9	(3.00)
07		(3.4)	(295)		---	---	1.8	(2.80)
08		(3.4)	(290)				1.9	(2.85)
09		(3.0)	<300				1.6	(2.78)
10		(3.25)	310		---	---	1.9	(2.82)
11		(3.85)	270		---	---	1.6	(2.75)
12		(4.4)	250		---	---	1.9	(2.80)
13		(4.7)	260		---	---	2.2	(2.95)
14		(4.85)	280		---	---	2.5	(2.80)
15		(5.5)	290		---	---	2.4	(2.70)
16		(6.0)	250				1.9	(2.80)
17		(6.2)	260				(3.5)	(2.80)
18		(6.35)	265				1.9	(2.88)
19		(7.45)	245				1.8	(2.80)
20		(6.2)	250				1.2	(2.72)
21		(6.25)	260					(2.65)
22		(5.1)	260					(2.50)
23		(4.5)	275				1.3	(2.60)

Time: 165.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 63

Dakar, French W. Africa (14.7°N, 17.4°W) — August 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.8	330					2.63
01		6.5	310					2.69
02		6.3	305					2.65
03		6.2	285					2.74
04		6.1	250				3.4	2.93
05		5.6	240				3.2	3.06
06		6.9	250		123	1.70	3.4	3.20
07	(260)	8.5	240	(4.00)	111	2.75	4.8	3.30
08	265	9.4	230	(4.50)	111	3.40	4.9	3.04
09	310	10.4	220	5.15	109	3.70	4.8	2.81
10	360	11.6	210	(5.40)	109	3.95	4.7	2.65
11	380	12.6	210	5.55	109	4.10		2.65
12	420	13.1	210	(5.70)	107	4.20		2.62
13	430	13.5	210	5.70	109	4.10		2.66
14	420	13.5	210	5.60	109	4.00	3.9	2.63
15	395	13.4	220	5.40	109	3.75	3.8	2.73
16	385	13.3	230	5.00	111	3.40	3.3	2.74
17	360	13.0	250	4.60	111	2.90	4.8	2.80
18	---	12.8	270	----	119	1.90	4.7	2.76
19		12.0	305				3.3	2.48
20		10.6	380				3.3	2.40
21		8.6	400					2.40
22		7.6	380					2.48
23		7.2	355					2.56

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 64

Djibouti, French Somaliland (11.5°N, 43.1°E) — August 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		---	300				2.6	----
01		(8.7)	280				2.4	(2.65)
02		(8.3)	260				2.4	(2.95)
03		8.6	230				2.4	(2.90)
04		8.0	220				2.2	3.20
05		6.4	215				2.4	3.15
06		7.0	250		126	1.50	2.4	3.05
07	---	9.4	235	---	115	2.60	4.4	3.10
08	(260)	10.8	225	---	115	3.25	4.6	3.00
09	(290)	10.8	220	---	119	3.70	5.4	2.65
10	---	11.6	210	5.5	119	3.90	9.0	2.45
11	(320)	11.6	210	5.7	118	4.05	9.2	2.30
12	(375)	11.4	205	6.0	119	4.15	9.4	2.30
13	390	11.4	210	6.7	119	4.10	10.0	2.30
14	390	11.4	210	6.6	118	4.00	9.2	2.25
15	410	11.6	210	6.3	119	3.80	5.4	2.30
16	(380)	11.9	220	---	120	3.50	5.3	2.30
17	---	11.6	235	---	118	3.00	5.4	(2.30)
18	---	10.9	270		123	2.00	4.5	2.25
19		(10.0)	330				2.3	(2.20)
20		(9.6)	380					----
21		(9.6)	345				1.8	(2.35)
22		(8.8)	350				2.1	(2.30)
23		---	320				2.2	----

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 65

Tananarive, Madagascar (18.9°S, 47.6°E) — August 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.0	240					2.88
01		3.9	(260)					2.87
02		3.8	(260)					2.90
03		3.0	245				3.1	2.86
04		3.0	(260)				3.1	2.88
05		2.8	(270)				3.0	2.81
06		3.5	260		---	----	2.8	2.85
07		8.0	240		---	2.25	2.9	3.19
08	(270)	9.7	240		115	3.00		3.06
09	275	>10.4	235	5.25	113	3.40		3.04
10	280	>10.5	230	5.30	111	3.70		3.00
11	280	>10.5	220	5.30	111	3.90		2.94
12	280	10.3	220	5.40	111	(3.95)		2.83
13	305	>10.5	220	(5.20)	111	3.85		<2.83
14	315	10.2	230	(5.50)	111	3.75		2.78
15	(310)	10.2	240	----	113	3.55		(2.75)
16	(275)	>10.0	240	----	115	3.20		2.79
17		9.8	250		122	2.55	2.7	2.82
18		10.0	240		---	1.70	2.8	2.93
19		8.6	230				2.8	2.91
20		7.0	225				1.9	2.99
21		6.5	240				2.9	2.93
22		6.2	245				2.6	3.00
23		4.9	240				2.5	3.08

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 66*

Campbell I. (52.5°S, 169.2°E) — August 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	<260	3.5						2.9
06	<270	3.6						2.9
07	240	5.2			155	2.0		3.1
08	230	6.7	---	---	115	2.3		3.3
09	240	7.5	230	3.6	120	2.7		3.2
10	250	8.6	230	4.0	115	2.9		3.2
11	250	9.2	230	4.3	110	3.0		3.1
12	250	9.5	230	4.2	115	3.0		3.1
13	240	9.2	220	4.1	120	3.0		3.1
14	240	9.3	220	3.8	120	2.8		3.1
15	240	9.2	230	3.6	120	2.5		3.15
16	230	8.8			140	2.0		3.1
17	230	8.2			---	---		3.0
18	240	7.1						2.9
19	240	6.2						2.8
20	250	5.5						2.8
21	<270	5.2						2.7
22	270	5.2						2.7
23	290	4.8						2.7

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 19-hour working schedule.

Table 67*

Campbell I. (52.5°S, 169.2°E) August 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	foEs	(M3000)F2
00								
01								
02								
03								
04								
05	---	E						---
06	---	E						(3.2)
07	250	2.9	220	(1.8)	---	---		3.5
08	250	4.1	230	2.6	130	2.2		3.75
09	270	4.7	230	3.4	130	2.5		3.65
10	270	5.0	230	3.7	130	2.7		3.65
11	280	5.1	230	3.8	130	2.8		3.65
12	280	5.2	230	3.8	130	2.8		3.5
13	280	5.4	230	3.8	130	2.8		3.6
14	280	5.4	230	3.7	130	2.6		3.5
15	270	5.2	240	3.3	130	2.4		3.5
16	250	5.1	240	2.7	130	2.0		3.5
17	250	4.7	230	---				3.4
18	250	4.1						3.4
19	270	3.4						3.3
20	---	2.8						3.3
21	---	2.3						3.2
22	---	2.0						3.3
23	---	E						---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 19-hour working schedule.

Table 68

Leopoldville, Belgian Congo (4.3°S, 15.3°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	5.0						2.6
01	255	5.0						2.7
02	255	4.4						2.8
03	235	4.5						2.8
04	235	3.8						3.0
05	250	4.9	240	---	---	---	2.3	3.1
06	270	6.1	225	---	110	2.4	3.0	3.0
07	310	6.6	220	4.4	110	3.0	3.3	2.7
08	320	7.7	210	4.5	110	3.2	3.5	2.6
09	360	8.4	205	4.5	110	3.4	3.5	2.4
10	400	8.7	205	4.5	110	3.5		2.4
11	400	9.4	200	4.5	110	3.5		2.4
12	390	10.0	200	4.6	110	3.5		2.4
13	370	10.3	220	4.4	110	3.4		2.4
14	355	10.5	215	4.3	110	3.1	3.4	2.4
15	350	10.0	220	4.3	110	2.7	2.9	2.4
16	345	10.0	230	---	115	2.3	3.0	2.5
17	285	10.1	260	---	---	---	2.3	2.5
18	275	9.2						2.5
19	280	9.1						2.5
20	250	9.0						2.7
21	220	10.0						3.1
22	205	7.4						3.0
23	220	5.2						2.7

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 69

Leopoldville, Belgian Congo (4.3°S, 15.3°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	5.3					2.5	3.0
01	230	3.7					3.0	2.7
02	240	3.0					2.9	2.9
03	275	2.5					3.1	2.8
04	240	2.3					3.2	3.0
05	250	3.7			---	---	2.8	3.0
06	255	6.2	235	---	115	2.3	3.4	3.2
07	270	7.4	225	---	110	3.0	4.0	3.0
08	285	8.0	220	4.5	110	3.2	4.4	3.0
09	290	8.6	210	4.6	110	3.4	4.4	2.9
10	310	8.9	200	4.7	105	3.5	4.4	2.7
11	310	9.0	210	4.7	105	3.6	4.2	2.7
12	310	9.9	195	4.6	105	3.5	4.0	2.6
13	320	11.0	210	4.5	110	3.4	4.0	2.6
14	310	11.1	215	4.4	110	3.1	3.5	2.6
15	300	11.7	225	---	110	2.8	3.4	2.6
16	270	11.4	240	---	115	2.3	3.2	2.7
17	240	11.3					3.1	2.8
18	230	11.2					2.6	2.9
19	215	9.8					2.9	3.05
20	210	7.1					2.4	3.1
21	210	6.2						3.0
22	220	5.4						2.85
23	220	5.1					1.7	2.9

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 70*

Campbell I. (52.5°S, 169.2°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	---	(1.5)						---
06								
07	270	3.2	---	---	---	1.5		3.1
08	260	3.8	---	---	120	2.0		3.2
09	270	4.5	240	3.4	120	2.4		3.2
10	300	4.8	240	3.7	120	2.6		3.15
11	310	5.2	250	3.9	120	2.7		3.1
12	320	5.3	250	4.0	120	2.7		3.0
13	330	5.2	240	3.9	120	2.8		3.1
14	300	5.2	250	3.7	130	2.6		3.1
15	300	5.3	250	3.4	120	2.4		3.1
16	270	5.2	250	3.0	140	2.0		3.1
17	260	4.9			---	1.5		3.1
18	280	4.2			---	---		2.9
19	280	3.8						2.9
20								
21	360	(2.8)						(2.8)
22								
23	370	(2.8)					1.9	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 71

Leopoldville, Belgian Congo (4.3°S, 15.3°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	5.6					2.7	3.0
01	210	4.1					2.6	3.1
02	215	3.5					2.6	2.9
03	235	2.9					3.0	2.9
04	250	2.4					3.0	2.9
05	255	3.6					2.5	2.9
06	245	6.3	230	---	115	2.2	3.1	3.2
07	260	7.4	220	---	110	2.8	4.1	3.1
08	260	7.7	215	4.2	110	3.1	4.0	3.1
09	265	8.1	210	4.6	110	3.3	4.0	3.05
10	280	8.6	205	4.6	105	3.5	5.0	2.9
11	280	9.0	200	4.6	110	3.5	4.3	2.8
12	290	9.5	205	4.5	105	3.4	4.4	2.8
13	300	11.0	225	4.4	110	---	4.0	2.7
14	290	10.9	225	4.2	110	3.1	3.8	2.7
15	285	10.8	230	---	---	2.8	3.8	<2.8
16	260	11.0	230	---	115	2.2	4.6	2.8
17	230	10.8					3.6	2.9
18	220	10.8					3.3	3.1
19	210	11.0					2.7	3.2
20	200	5.8					2.6	3.2
21	225	5.0					2.7	2.95
22	230	4.7					2.8	2.9
23	220	5.0					2.8	3.0

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 72

Leopoldville, Belgian Congo (4.3°S, 15.3°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	6.5					2.6	3.0
01	210	4.5					2.0	3.1
02	230	3.2					2.2	2.9
03	230	2.8					2.0	3.0
04	235	2.1					2.3	3.1
05	230	4.0	---	---	---	---	2.2	3.0
06	245	6.2	230	- -	110	2.3	3.0	3.1
07	270	7.1	215	---	110	2.9	3.6	2.95
08	280	8.3	215	---	105	3.1	3.3	2.9
09	290	9.6	205	4.5	105	3.4	4.1	2.8
10	290	10.0	200	4.6	105	3.4		2.8
11	295	10.6	200	4.6	105	3.5	4.1	2.8
12	300	11.1	200	4.6	105	3.4	4.0	2.7
13	285	11.6	240	4.3	105	3.3	4.2	2.7
14	280	11.8	225	---	105	3.1	3.9	2.8
15	270	11.5	230	---	110	2.7	4.1	2.8
16	240	11.7	240	---	115	---	3.6	2.9
17	225	11.0					3.0	3.0
18	210	10.9					3.1	3.1
19	210	6.9					2.9	3.2
20	210	5.0					2.6	3.0
21	220	4.6					2.4	2.8
22	250	4.7					2.6	2.8
23	230	5.9					2.5	2.8

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

USCOMM-NBS-BL

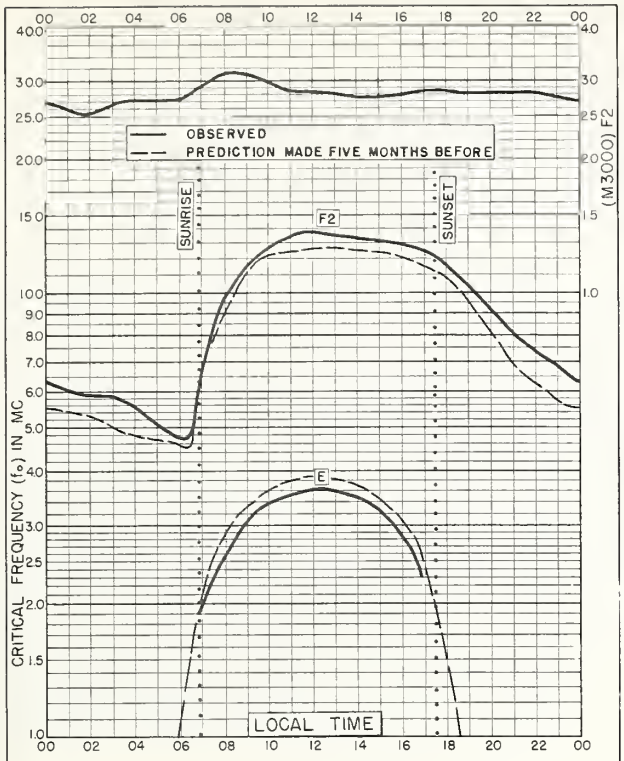


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W FEBRUARY 1959

NBS 503

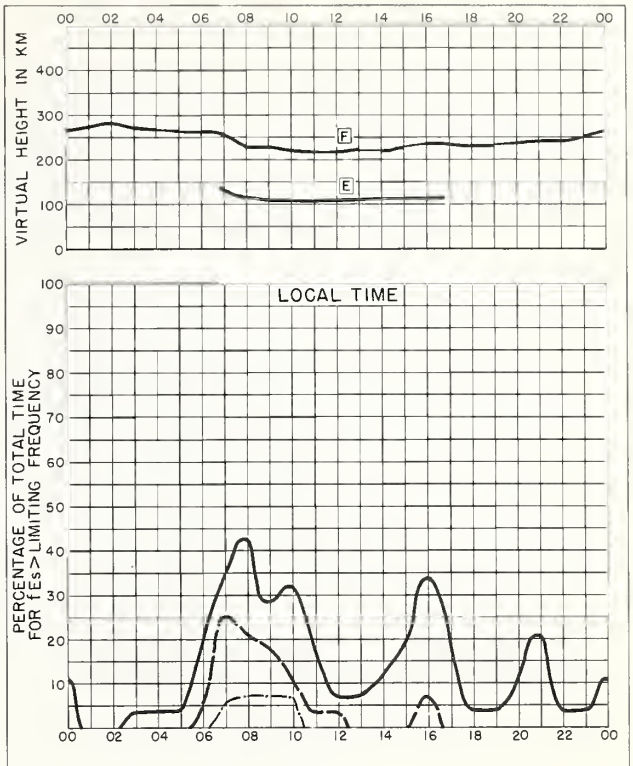


Fig. 2. WASHINGTON, D. C. FEBRUARY 1959

NBS 490

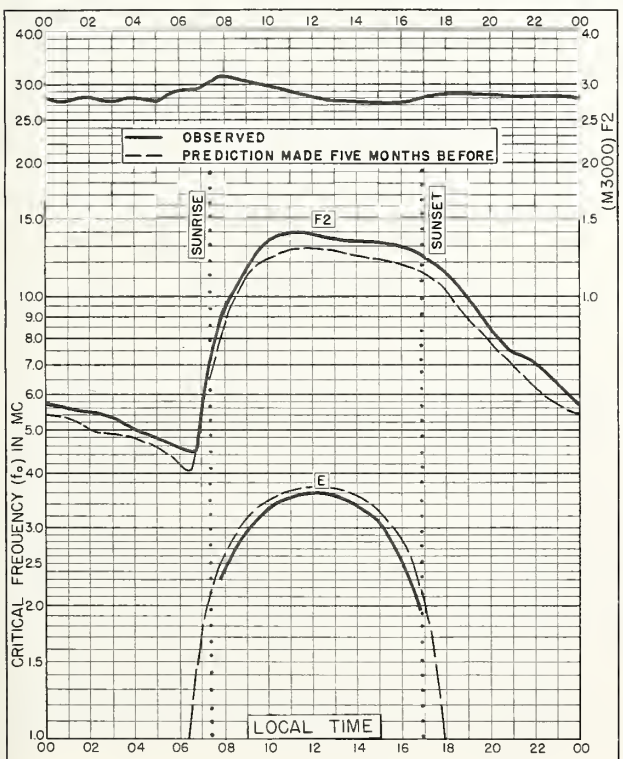


Fig. 3. WASHINGTON, D. C.
38.7°N, 77.1°W JANUARY 1959

NBS 503

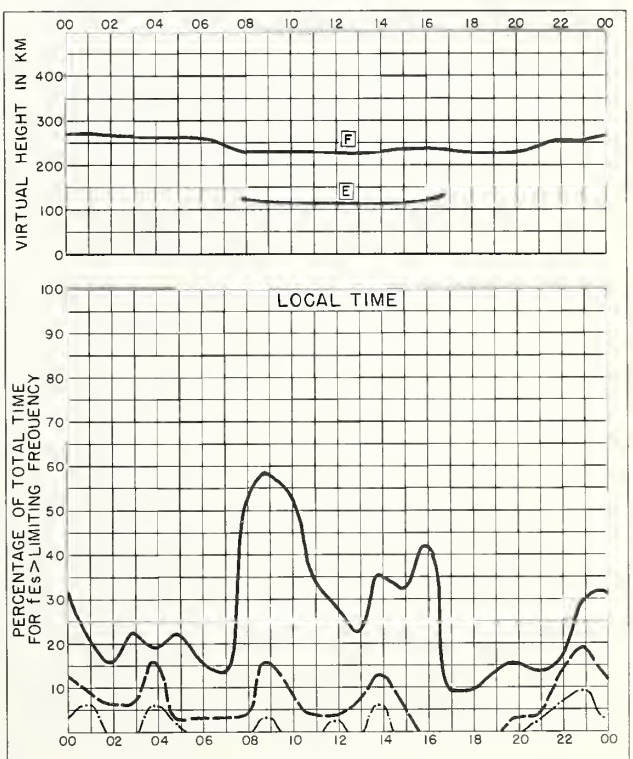


Fig. 4. WASHINGTON, D. C. JANUARY 1959

NBS 490

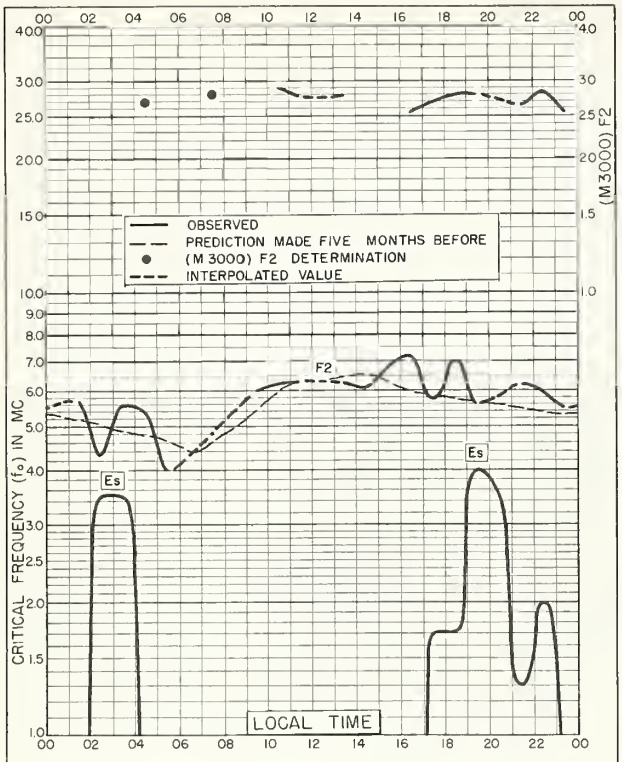


Fig. 5. THULE, GREENLAND
76.6°N, 68.7°W DECEMBER 1958

NBS 503

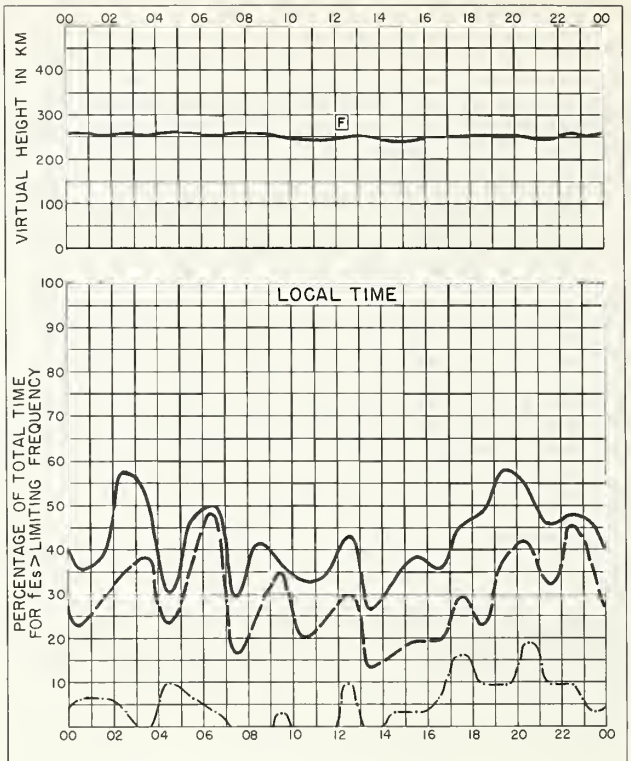


Fig. 6. THULE, GREENLAND DECEMBER 1958

NBS 490

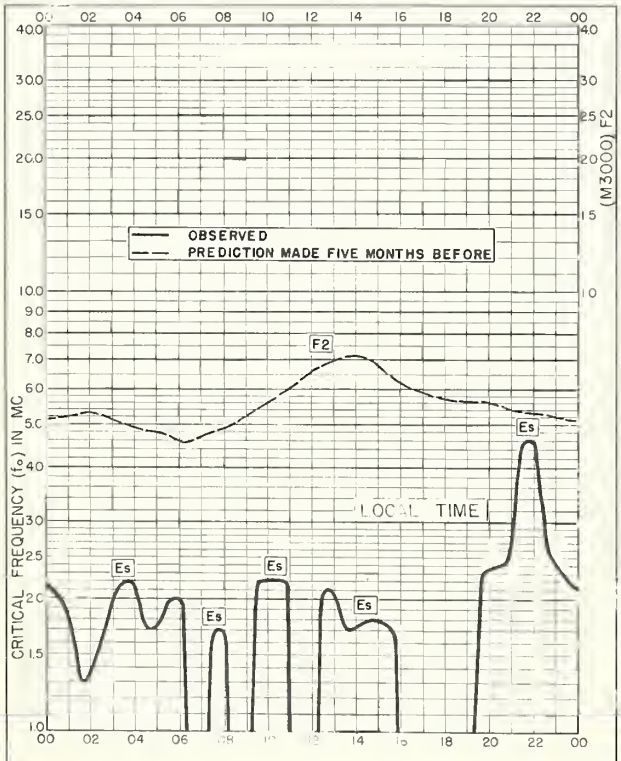


Fig. 7. FLETCHERS ICE I.
75.9°N, 124.3° W DECEMBER 1958

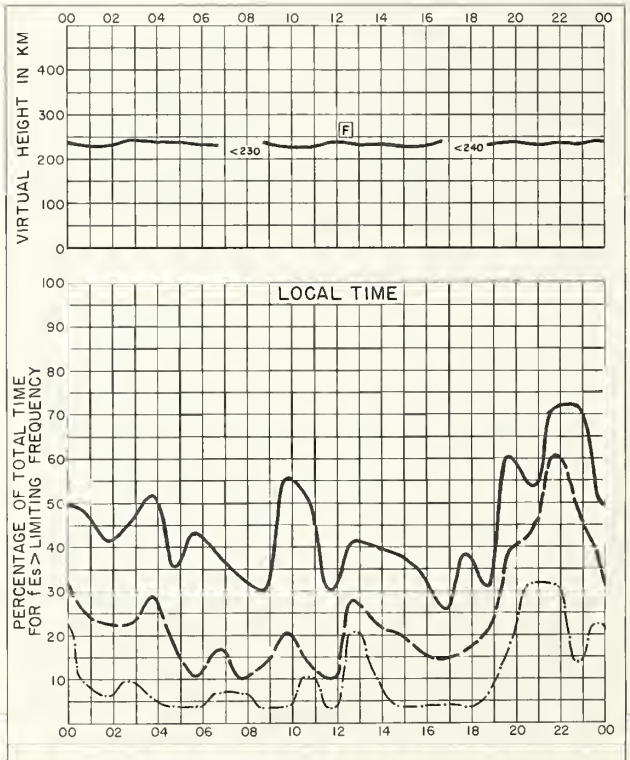


Fig. 8. FLETCHERS ICE I. DECEMBER 1958

NBS 490

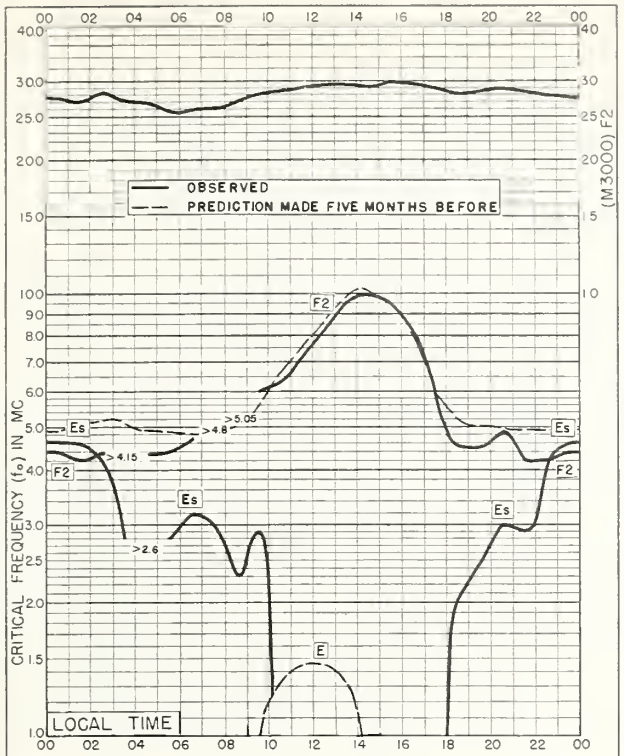


Fig. 9. POINT BARROW, ALASKA
71.3°N, 156.8°W DECEMBER 1958

NBS 503

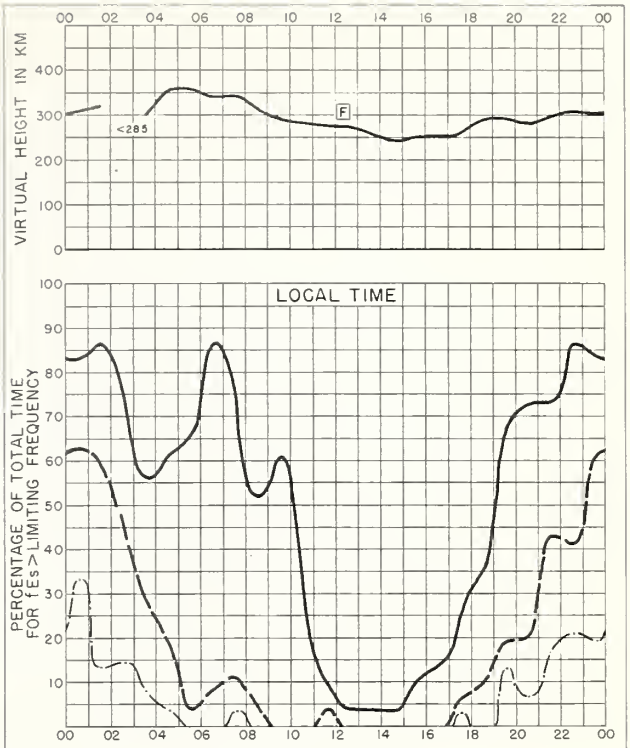


Fig. 10. POINT BARROW, ALASKA DECEMBER 1958

NBS 490

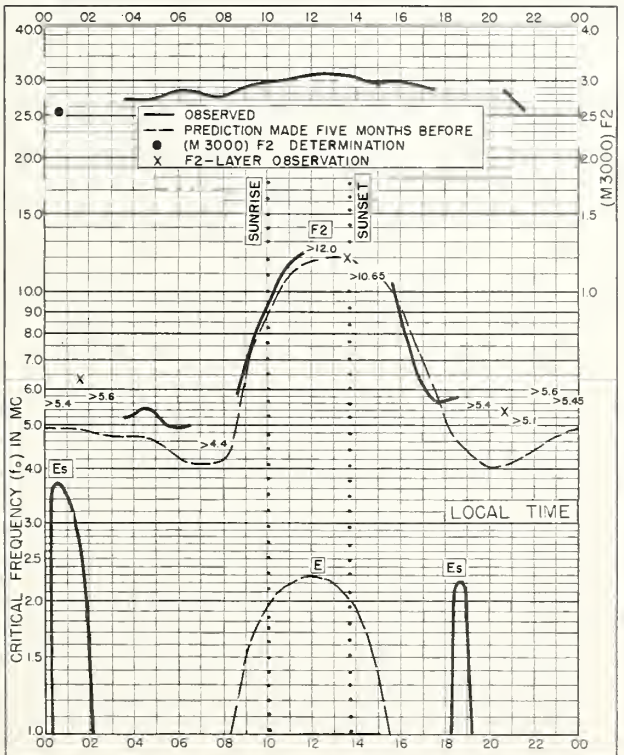


Fig. 11. REYKJAVIK, ICELAND
64.1°N, 21.8°W DECEMBER 1958

NBS 503

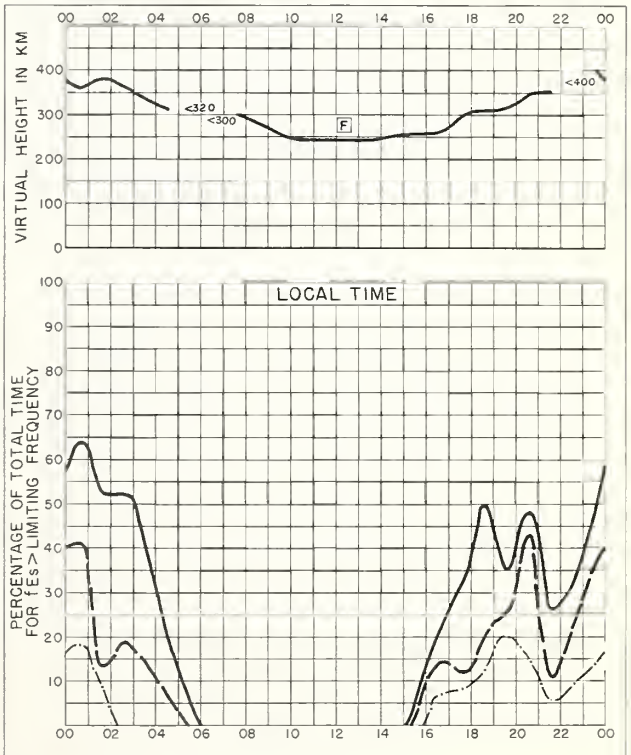


Fig. 12. REYKJAVIK, ICELAND DECEMBER 1958

NBS 490

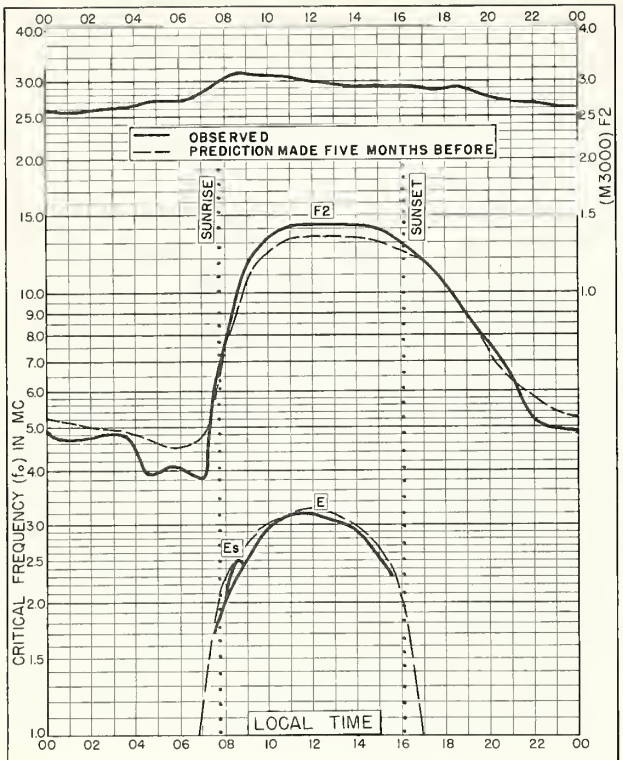
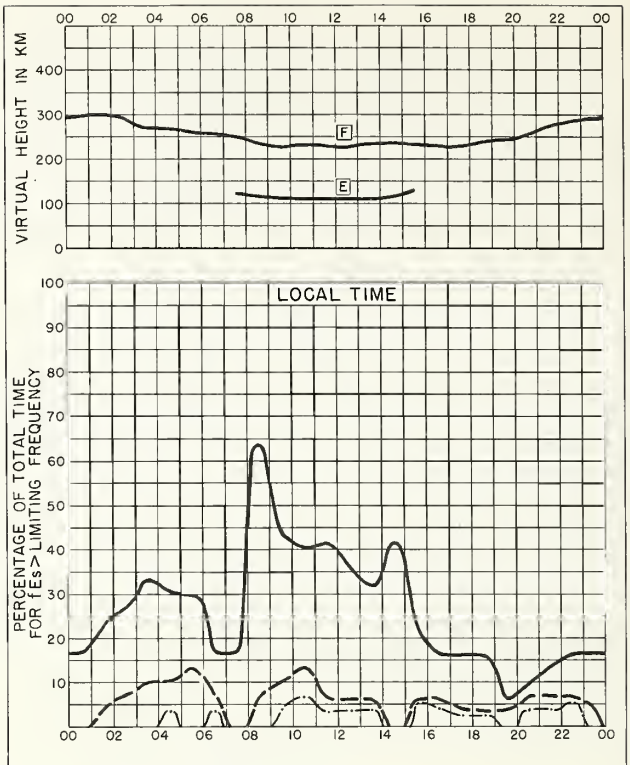


Fig. 13. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W DECEMBER 1958

NBS 503



DECEMBER 1958

Fig. 14. ST. JOHN'S, NEWFOUNDLAND

NBS 490

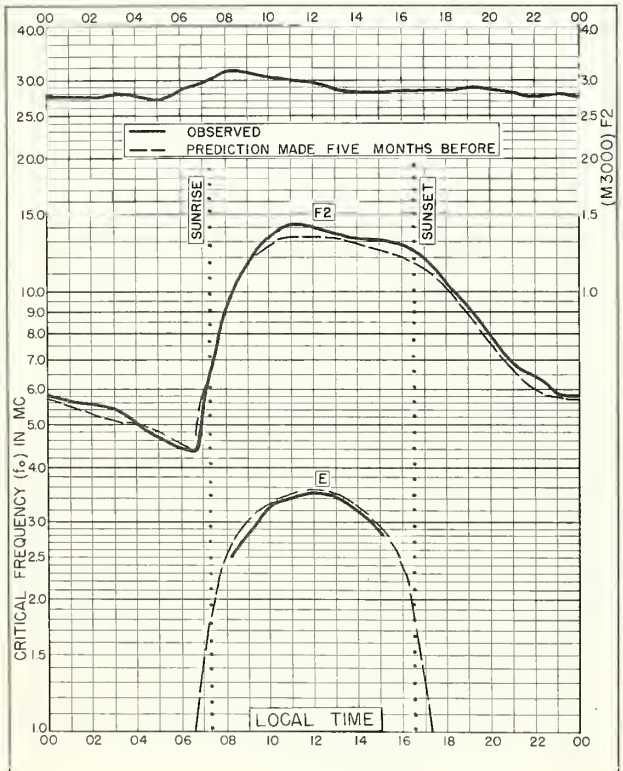
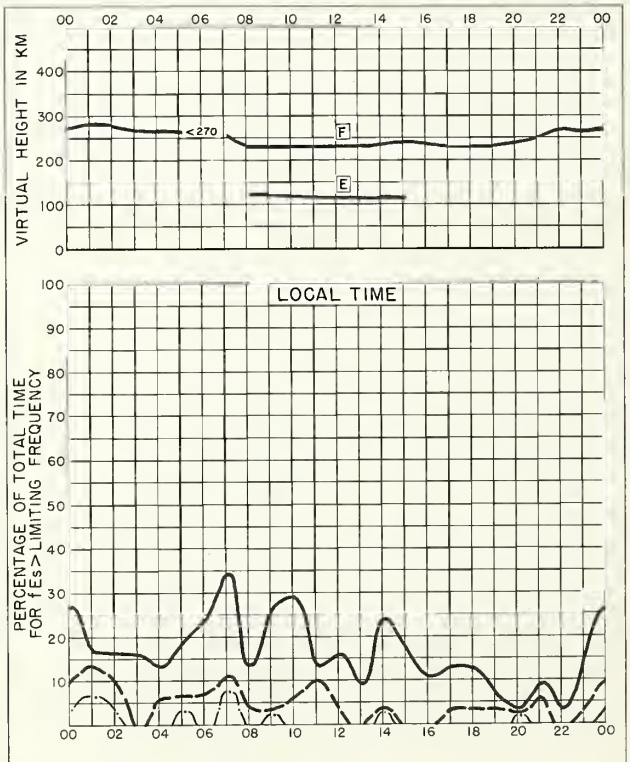


Fig. 15. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W DECEMBER 1958

NBS 503



DECEMBER 1958

Fig. 16. FT. MONMOUTH, NEW JERSEY

NBS 490

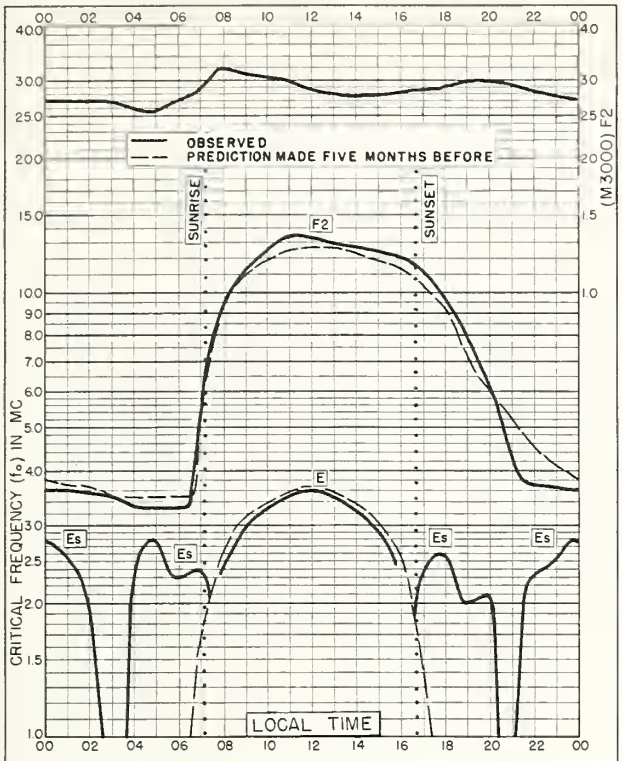
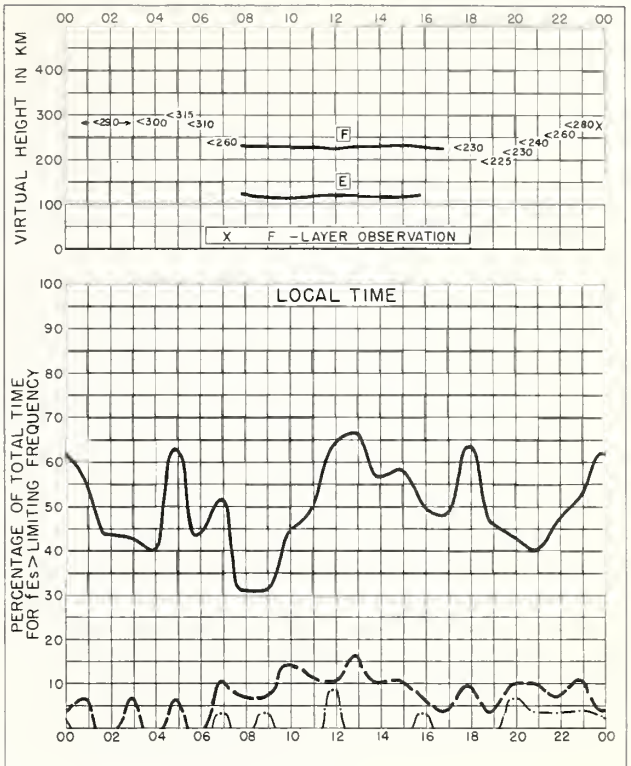


Fig. 17. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W DECEMBER 1958

NBS 503



DECEMBER 1958

Fig. 18. SAN FRANCISCO, CALIFORNIA

NBS 490

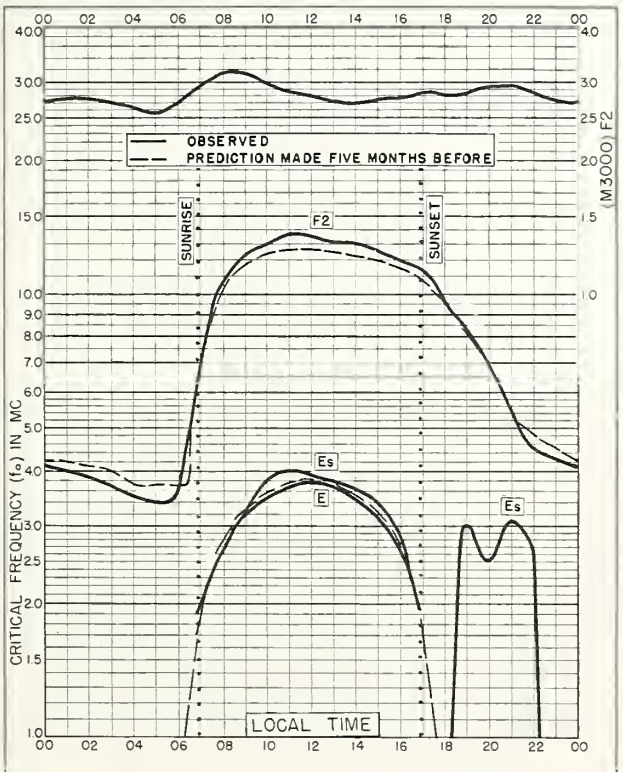
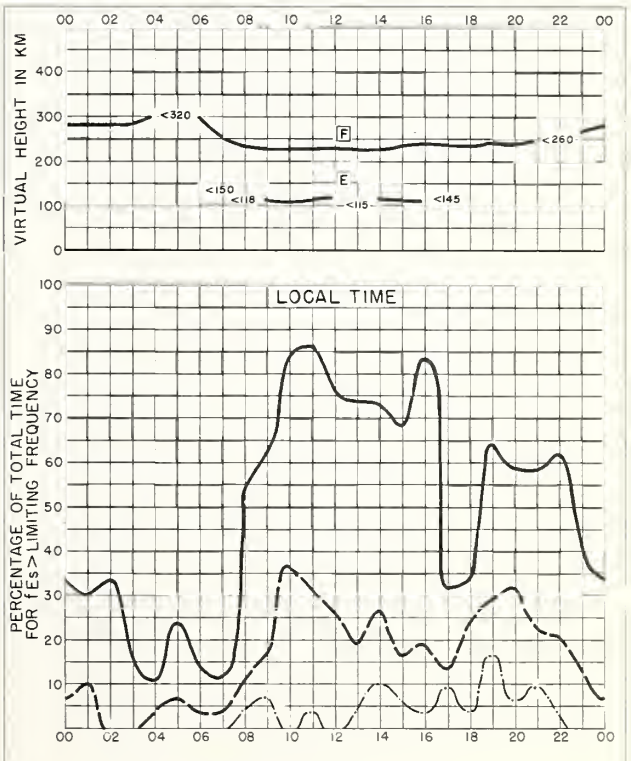


Fig. 19. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W DECEMBER 1958

NBS 503



DECEMBER 1958

Fig. 20. WHITE SANDS, NEW MEXICO

NBS 490

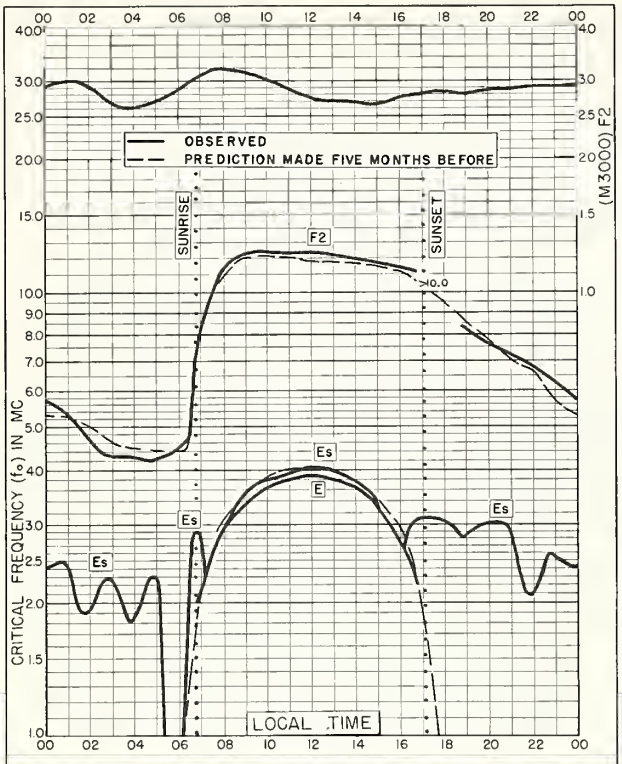


Fig. 21. GRAND BAHAMA I.
26.6°N, 78.2°W DECEMBER 1958

NBS 503

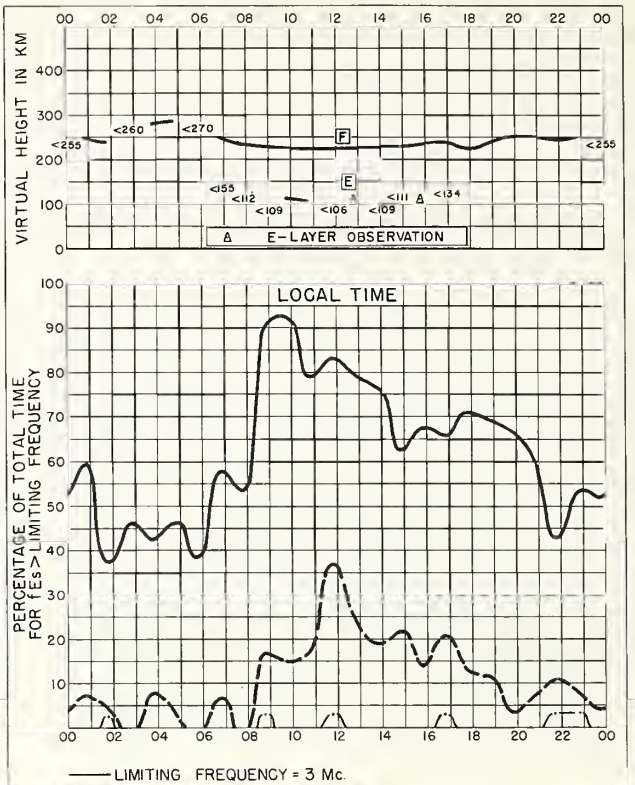


Fig. 22. GRAND BAHAMA I. DECEMBER 1958

NBS 490

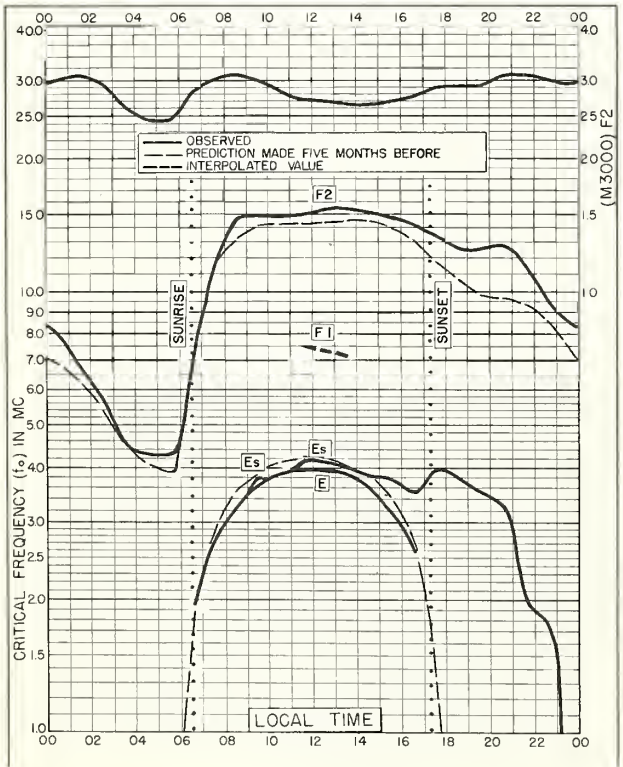


Fig. 23. MAUI, HAWAII
20.8°N, 156.5°W DECEMBER 1958

NBS 503

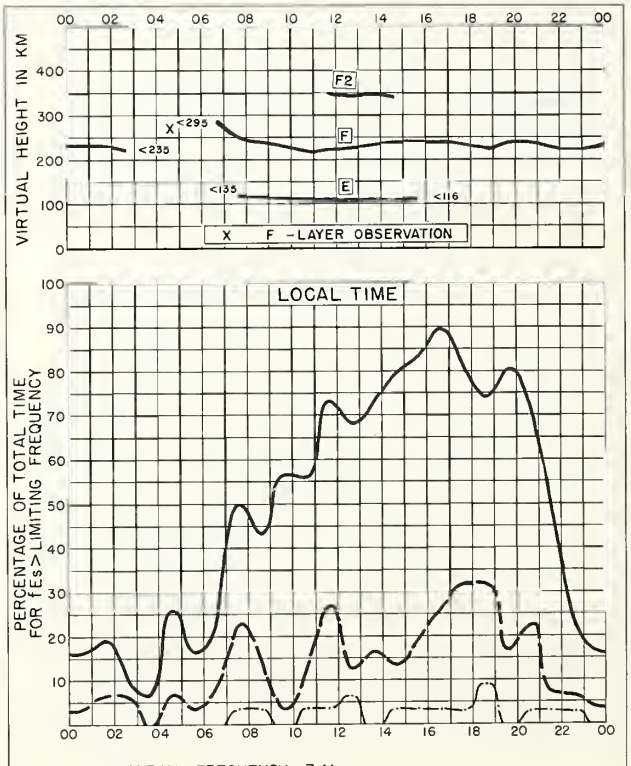


Fig. 24. MAUI, HAWAII DECEMBER 1958

NBS 490

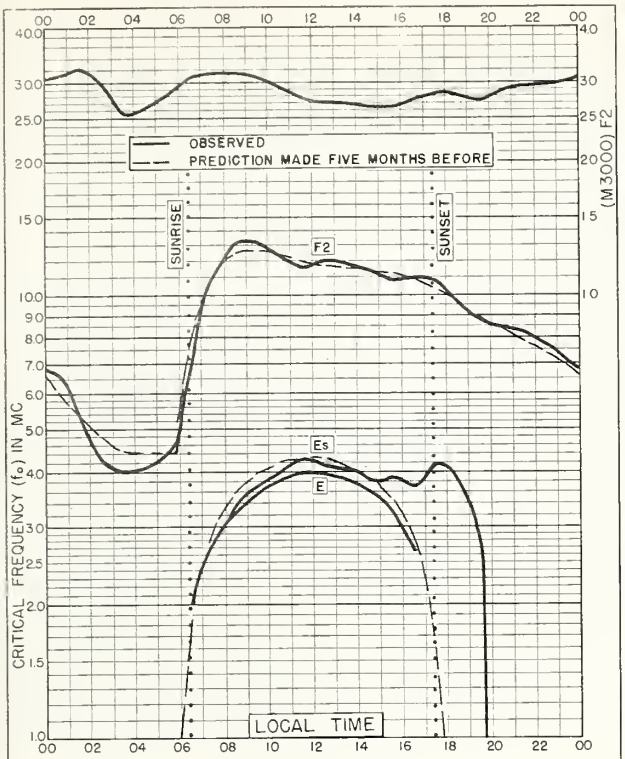


Fig. 25. PUERTO RICO, W. I.
18.5°N, 67.2°W DECEMBER 1958

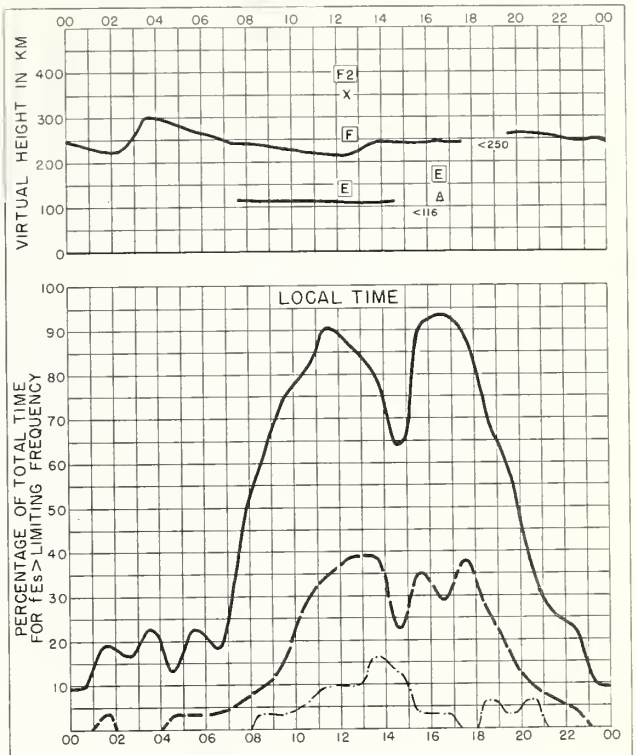


Fig. 26. PUERTO RICO, W. I. DECEMBER 1958

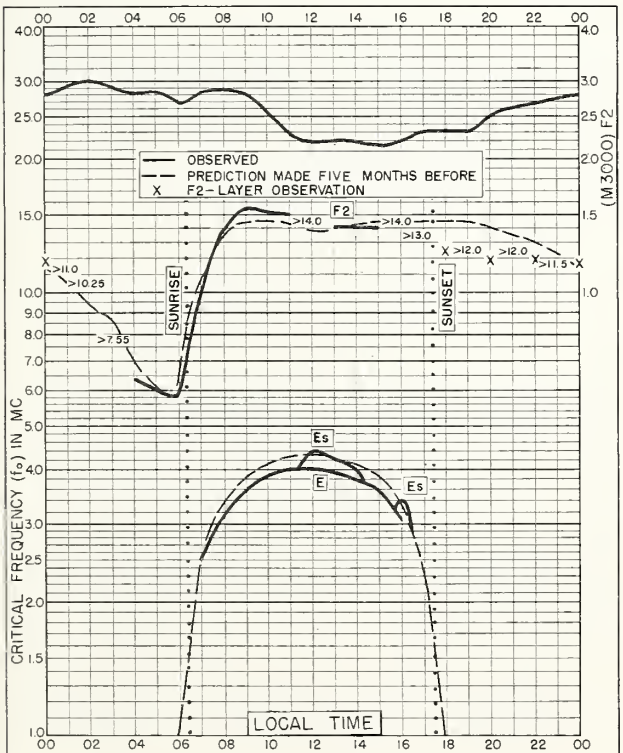


Fig. 27. BAGUIO, P.I.
16.4°N, 120.6°E DECEMBER 1958

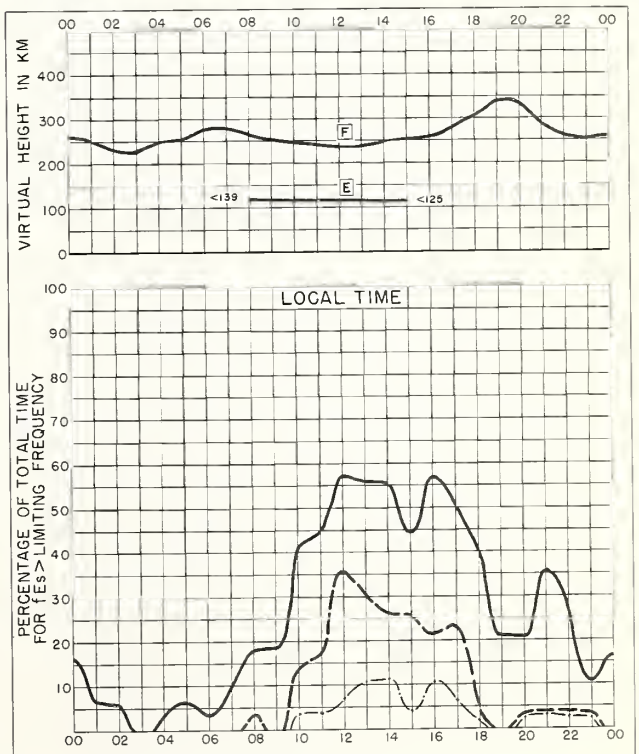


Fig. 28. BAGUIO, P. I. DECEMBER 1958

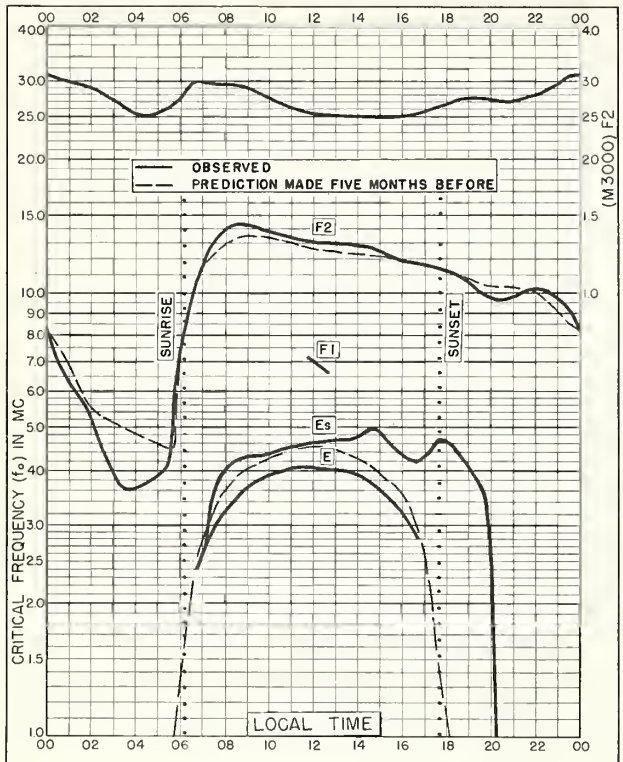


Fig. 29. PANAMA CANAL ZONE
9.4°N, 79.9°W DECEMBER 1958

NBS 503

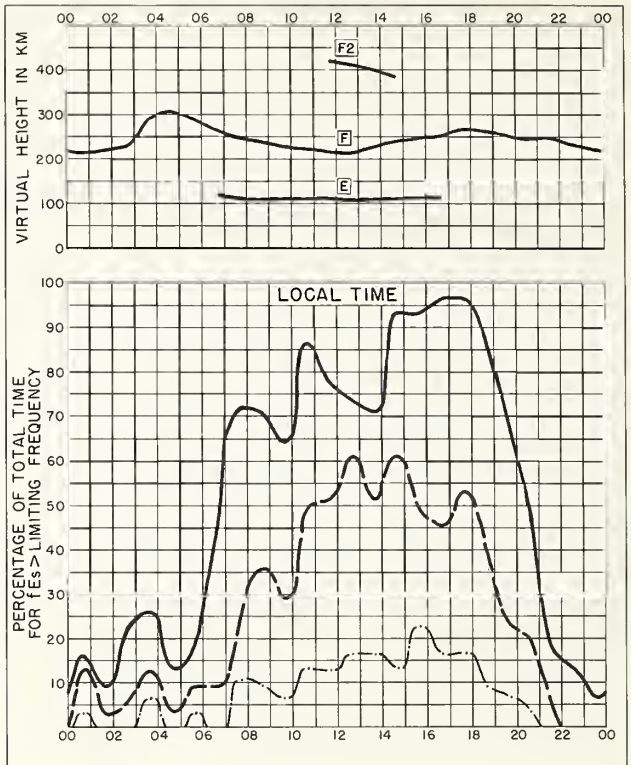


Fig. 30. PANAMA CANAL ZONE DECEMBER 1958

NBS 490

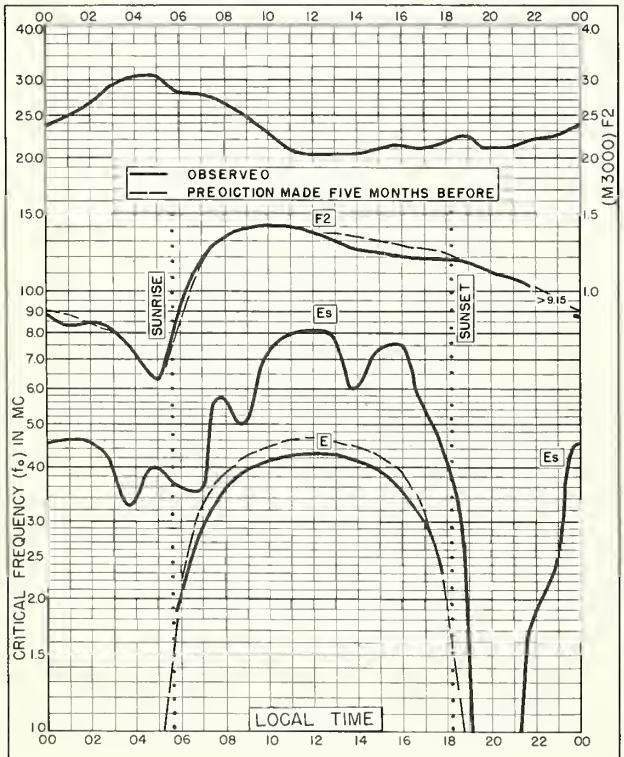


Fig. 31. CHIMBOTE, PERU
9.1°S, 78.6°W DECEMBER 1958

NBS 503

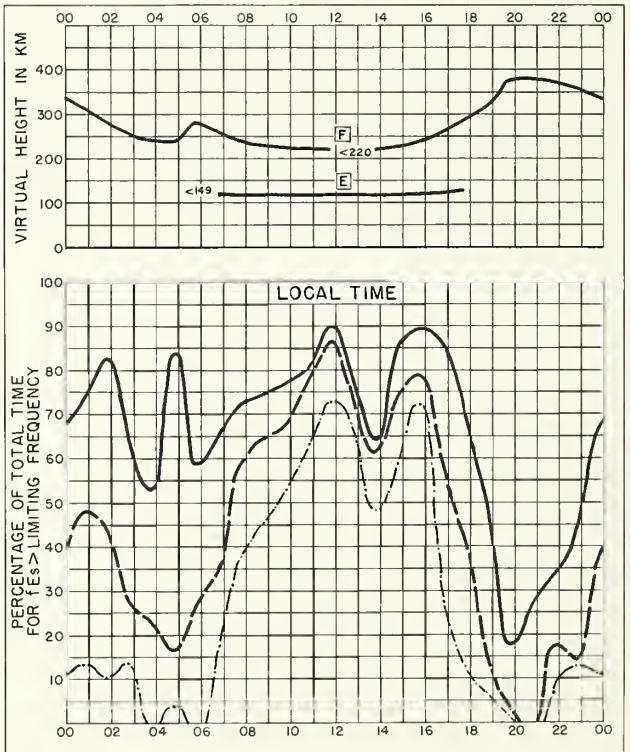


Fig. 32. CHIMBOTE, PERU DECEMBER 1958

NBS 490

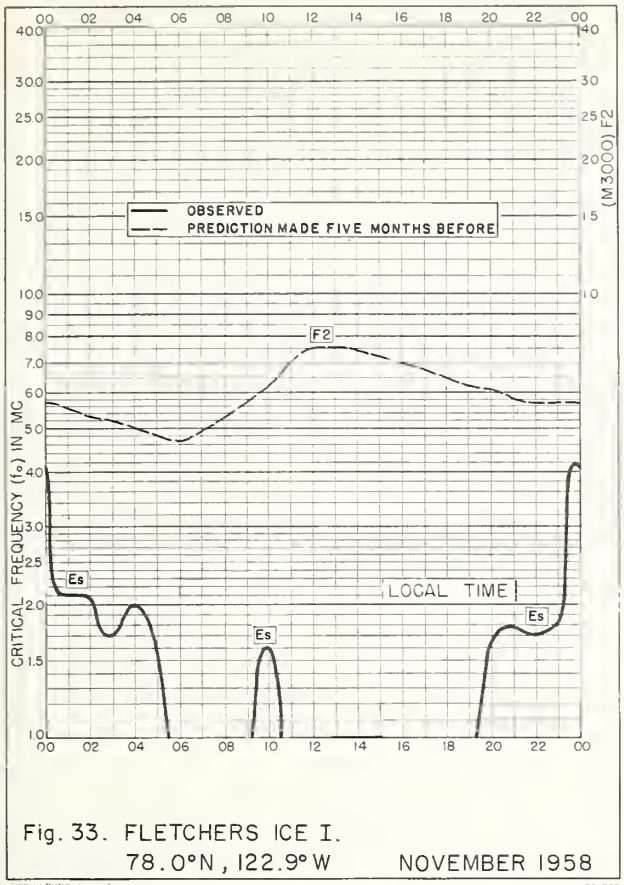


Fig. 33. FLETCHERS ICE I.
78.0°N, 122.9°W NOVEMBER 1958

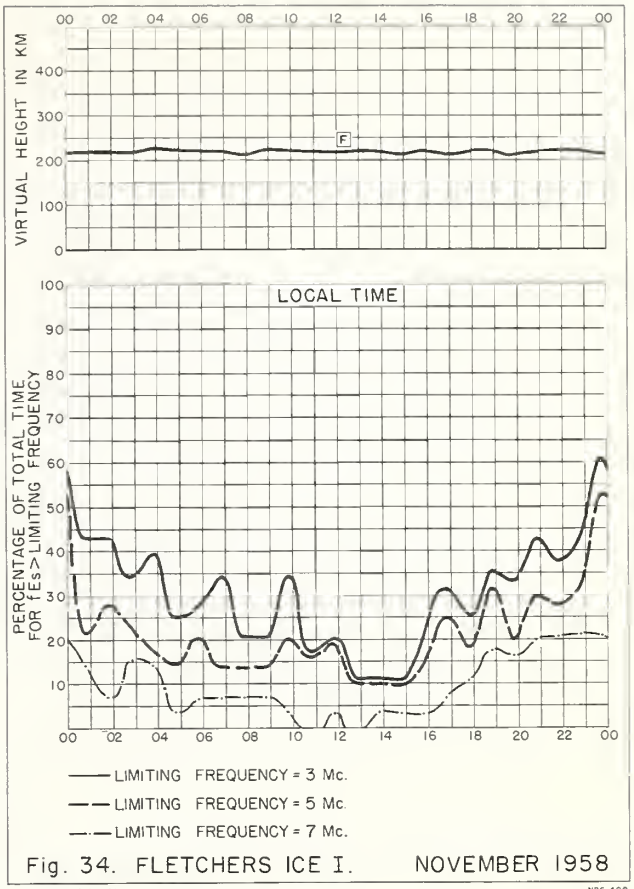


Fig. 34. FLETCHERS ICE I. NOVEMBER 1958

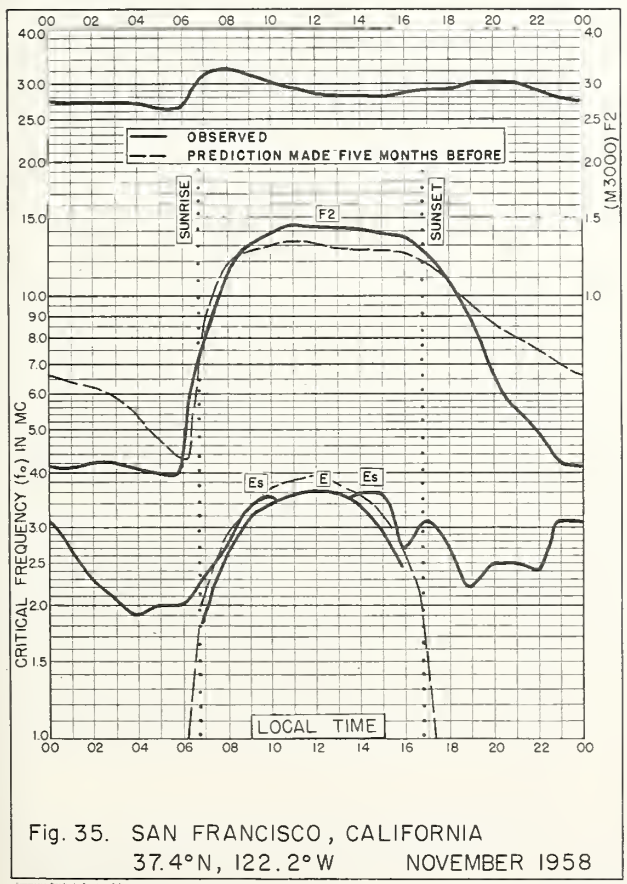


Fig. 35. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W NOVEMBER 1958

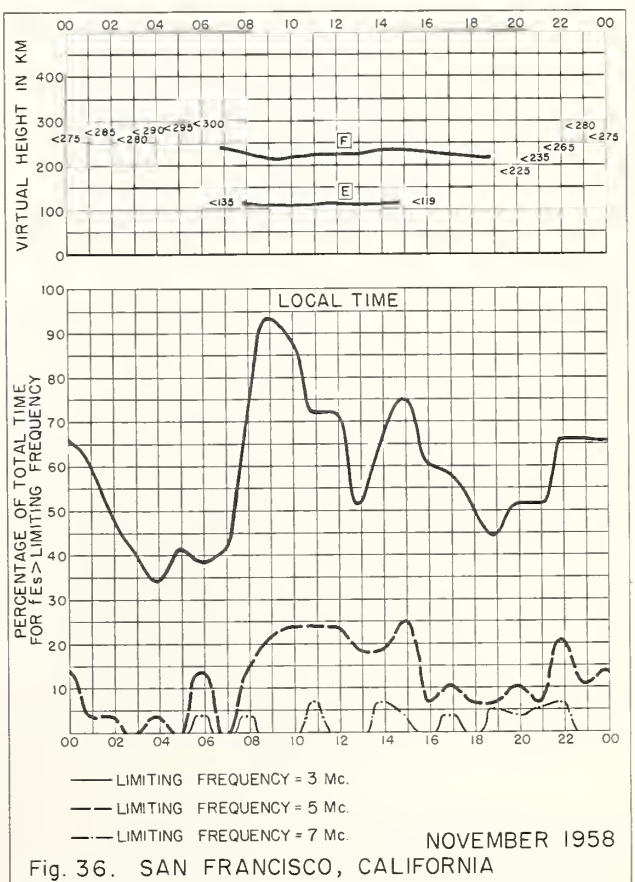


Fig. 36. SAN FRANCISCO, CALIFORNIA NOVEMBER 1958

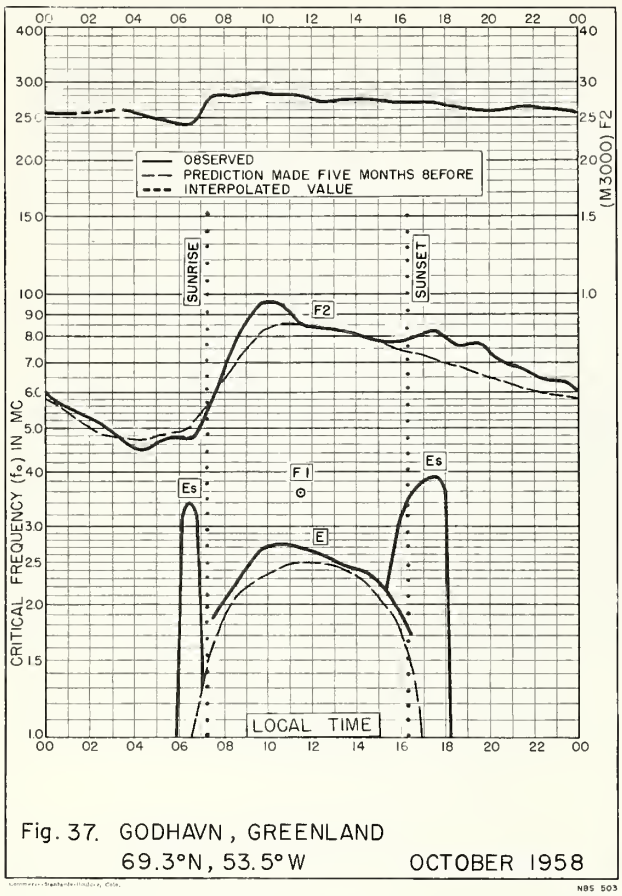


Fig. 37. GODHAVN, GREENLAND
69.3°N, 53.5°W OCTOBER 1958

NBS 503

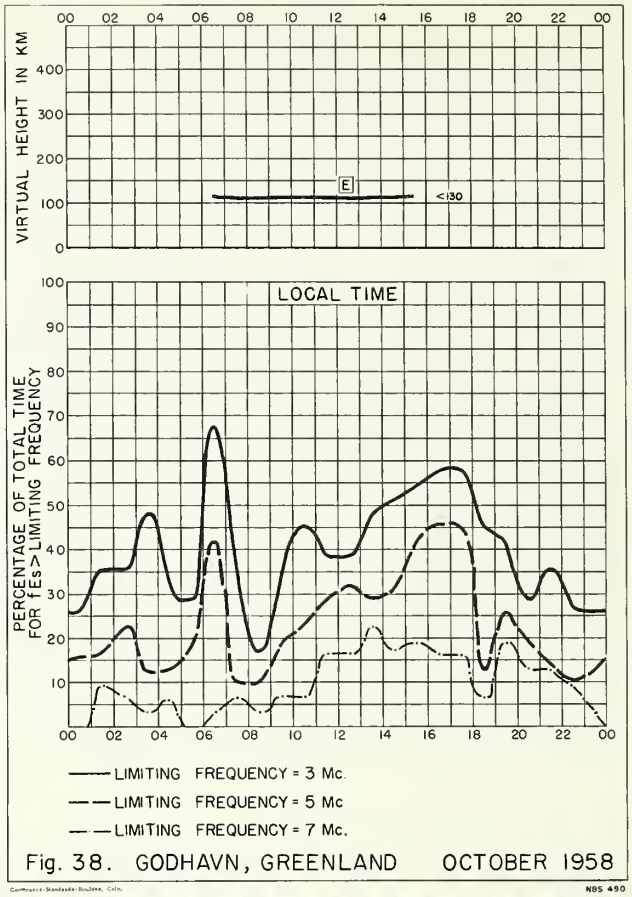


Fig. 38. GODHAVN, GREENLAND OCTOBER 1958

NBS 490

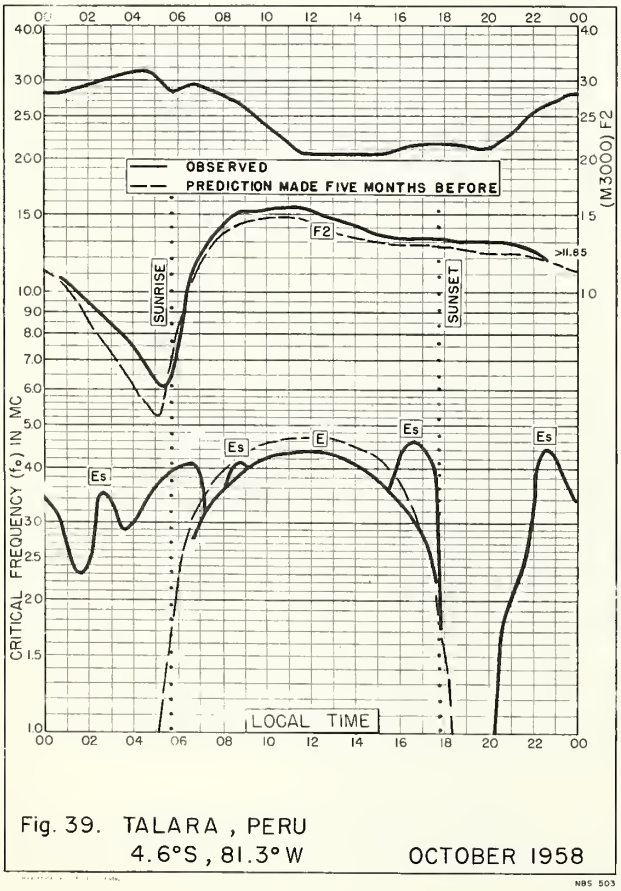


Fig. 39. TALARA, PERU
4.6°S, 81.3°W OCTOBER 1958

NBS 503

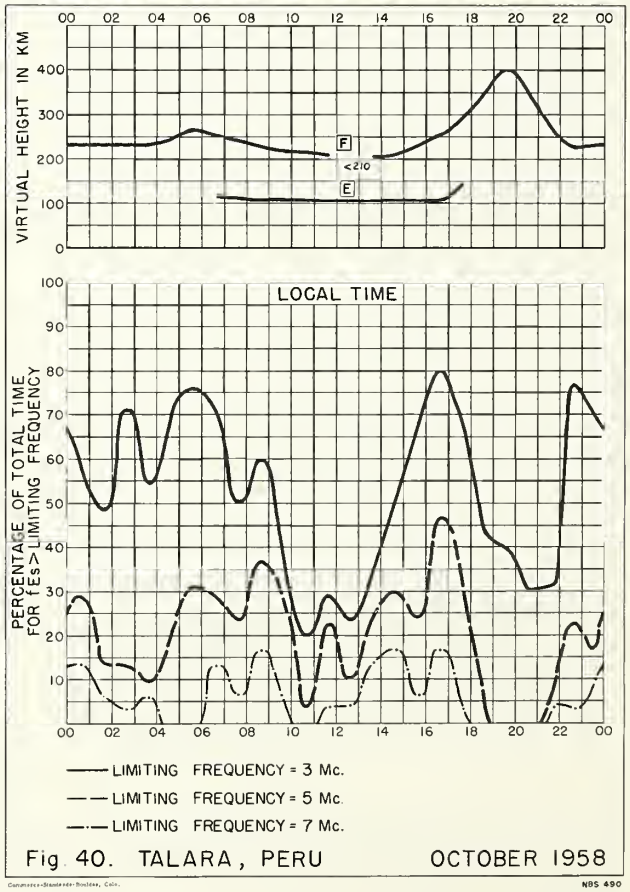


Fig. 40. TALARA, PERU OCTOBER 1958

NBS 490

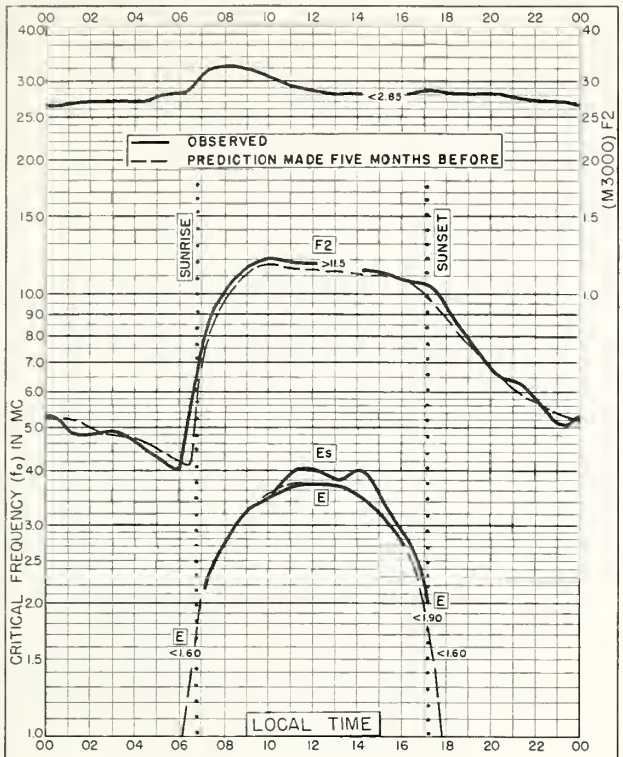


Fig. 41. BRISBANE, AUSTRALIA
27.5°S, 152.9°E JUNE 1958

NBS 503

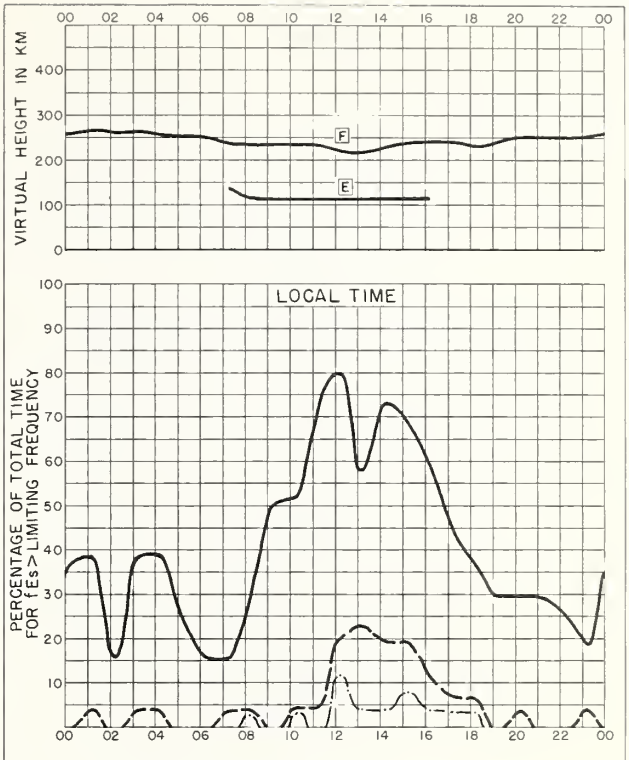


Fig. 42. BRISBANE, AUSTRALIA JUNE 1958

NBS 490

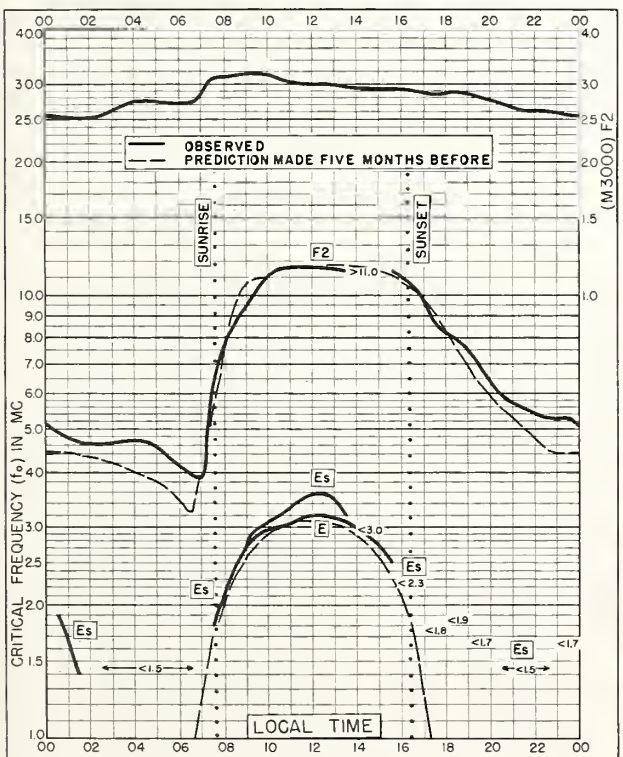


Fig. 43. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E JUNE 1958

NBS 503

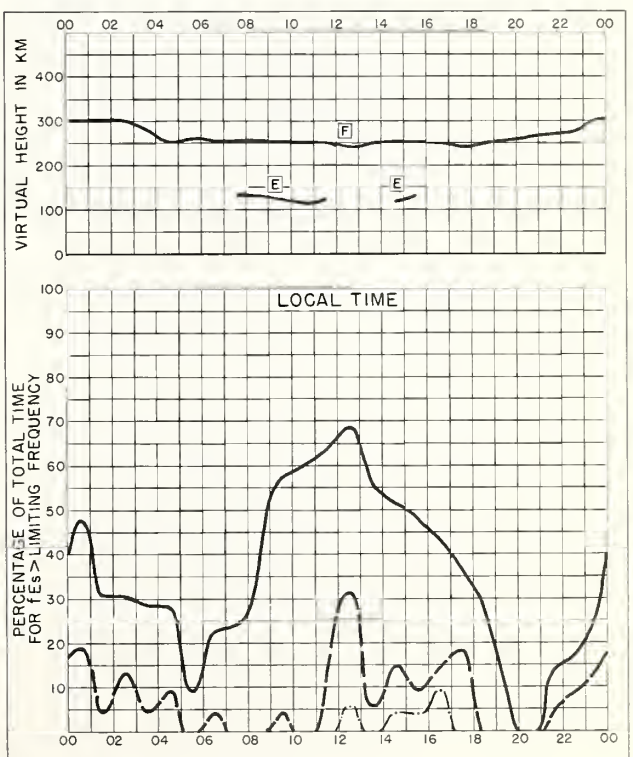


Fig. 44. CHRISTCHURCH, NEW ZEALAND JUNE 1958

NBS 490

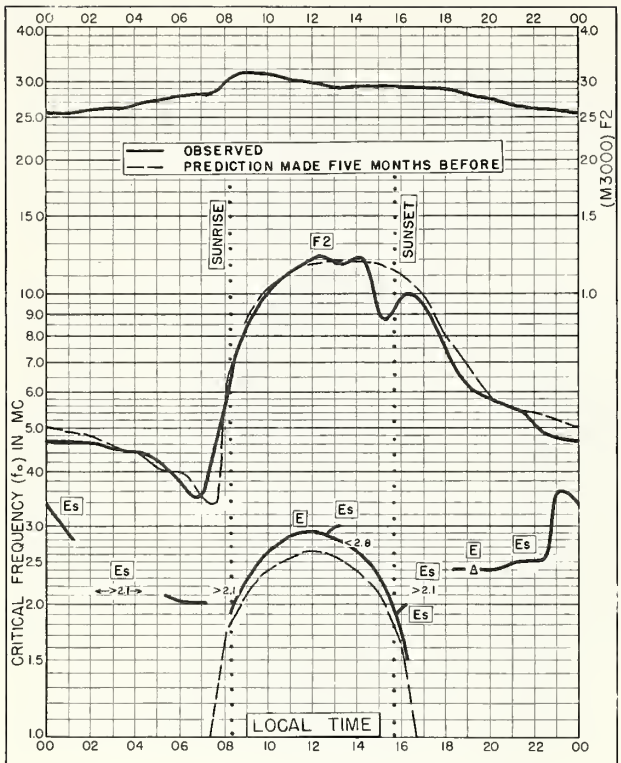


Fig. 45. CAMPBELL I.
52.5°S, 169.2°E JUNE 1958

NBS 503

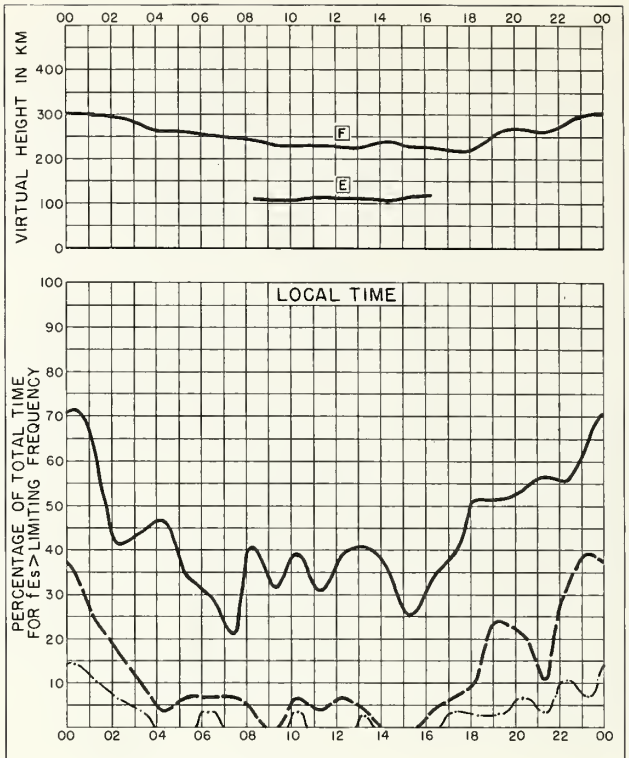


Fig. 46. CAMPBELL I. JUNE 1958

NBS 490

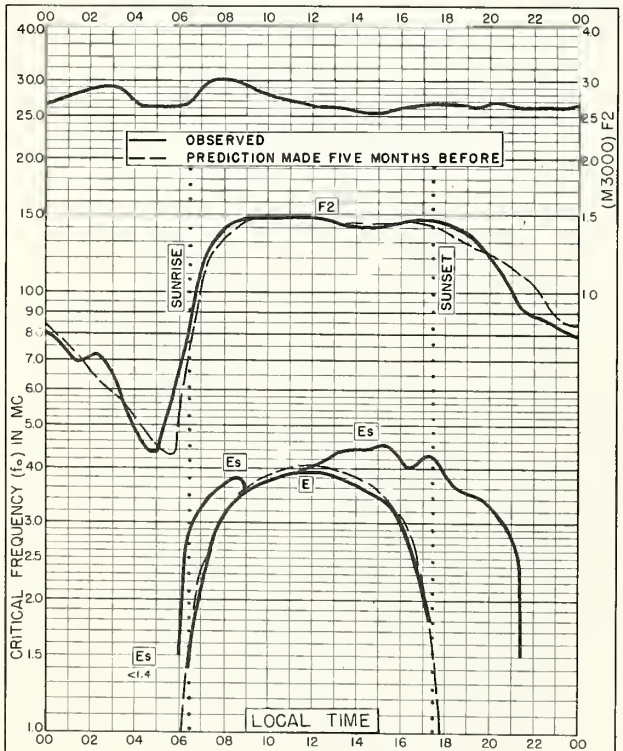


Fig. 47. RAROTONGA I.
21.2°S, 159.8°W MAY 1958

NBS 503

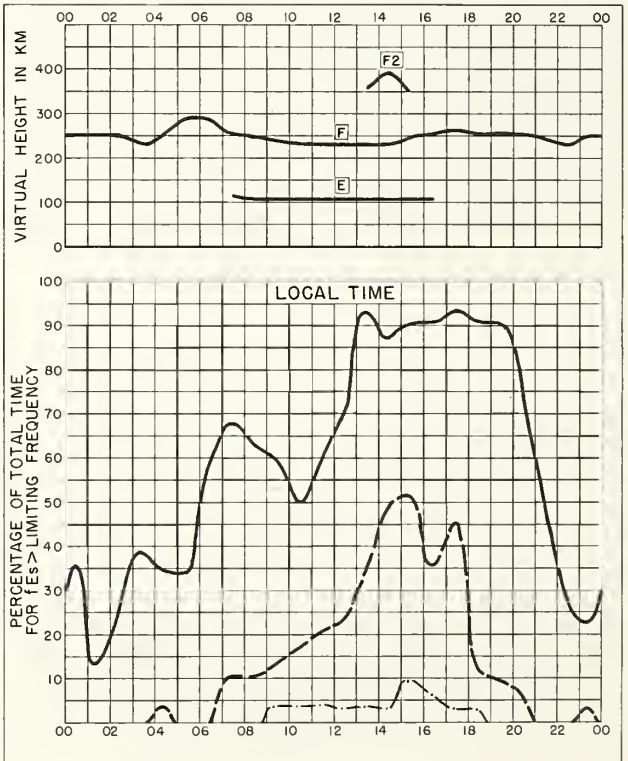


Fig. 48. RAROTONGA I. MAY 1958

NBS 490

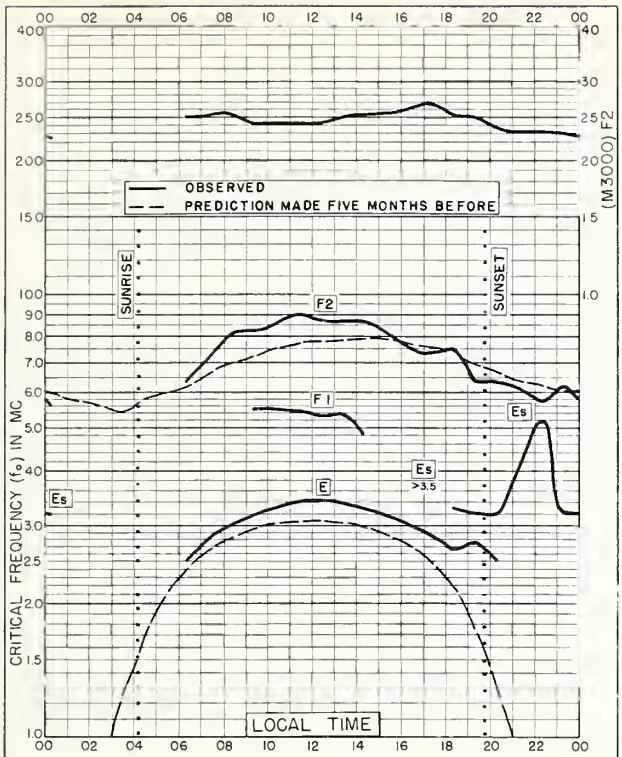


Fig. 49. TROMSO, NORWAY
69.7°N, 19.0°E APRIL 1958

NBS 503

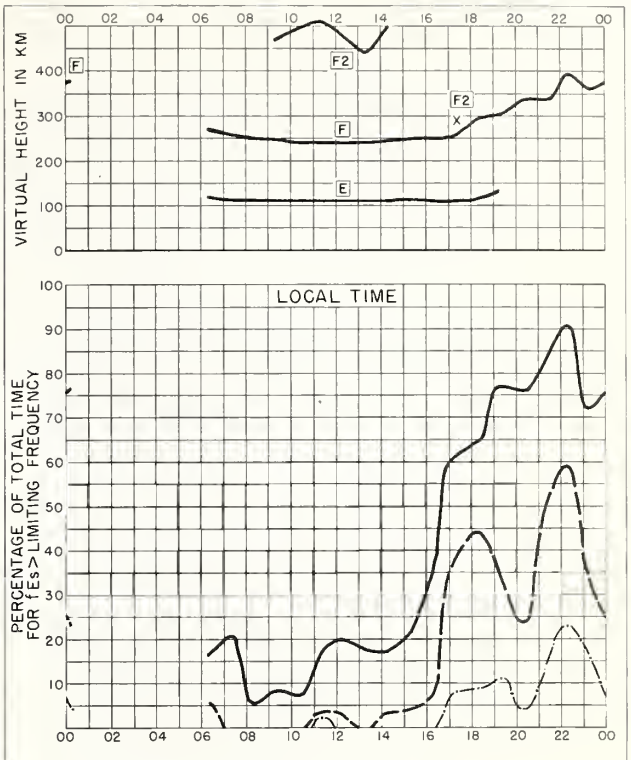


Fig. 50. TROMSO, NORWAY APRIL 1958

NBS 490

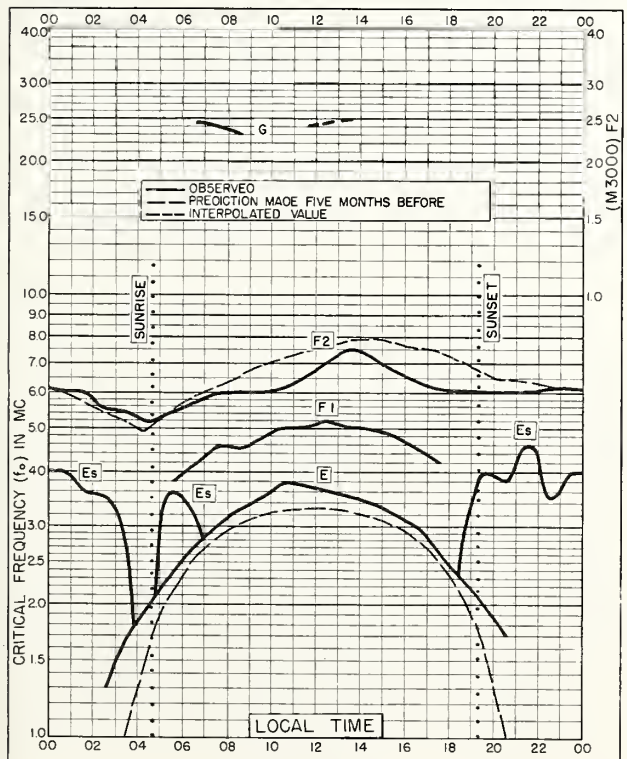


Fig. 51. BAKER LAKE, CANADA
64.3°N, 96.0°W APRIL 1958

NBS 503

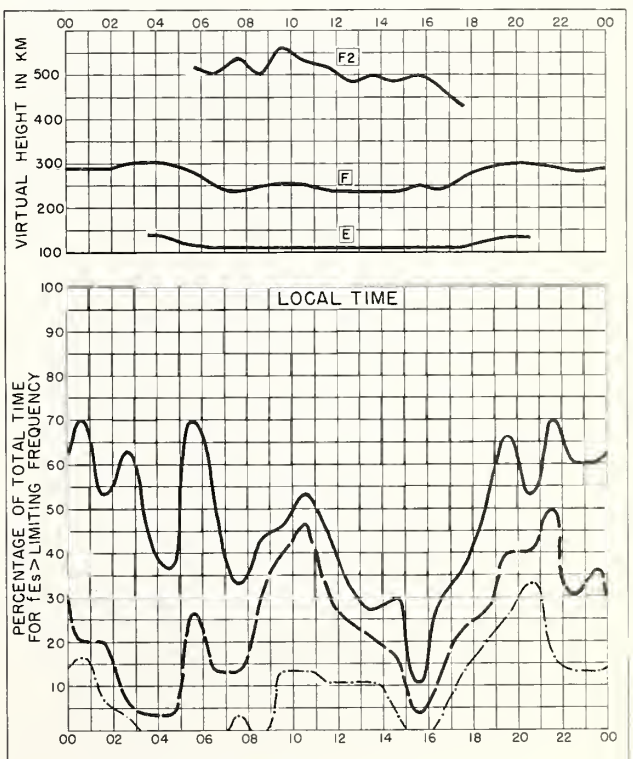


Fig. 52. BAKER LAKE, CANADA APRIL 1958

NBS 490

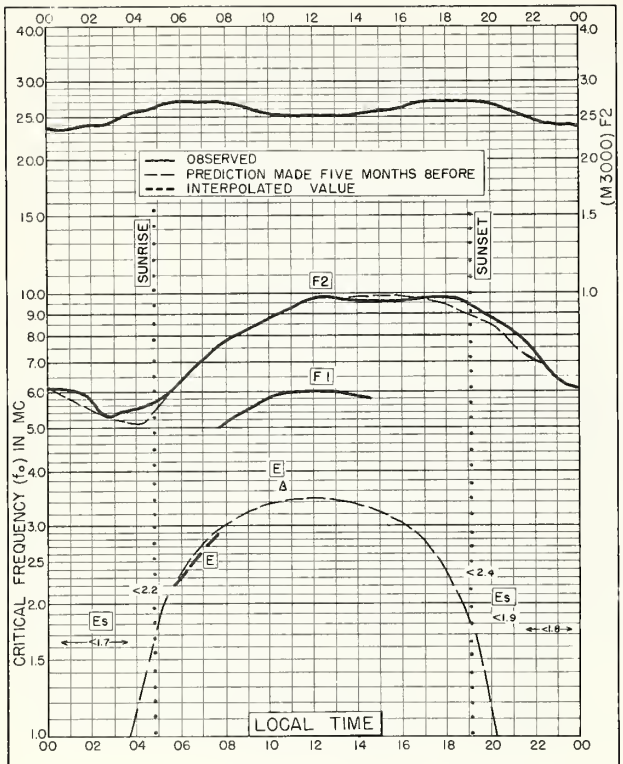


Fig. 53. NURMIJARVI , FINLAND
60.5°N, 24.6°E APRIL 1958

NBS 503

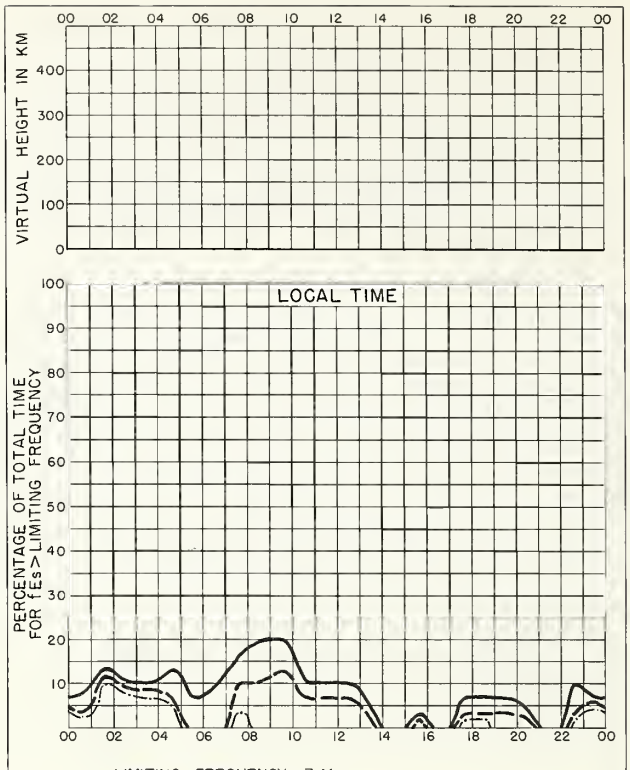


Fig. 54. NURMIJARVI, FINLAND APRIL 1958

NBS 490

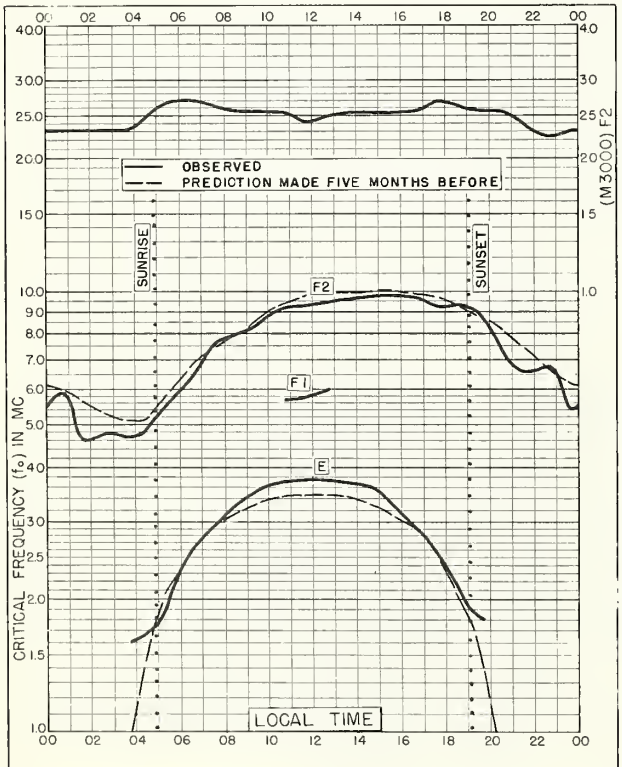


Fig. 55. OSLO , NORWAY
60.0°N, 11.1°E APRIL 1958

NBS 503

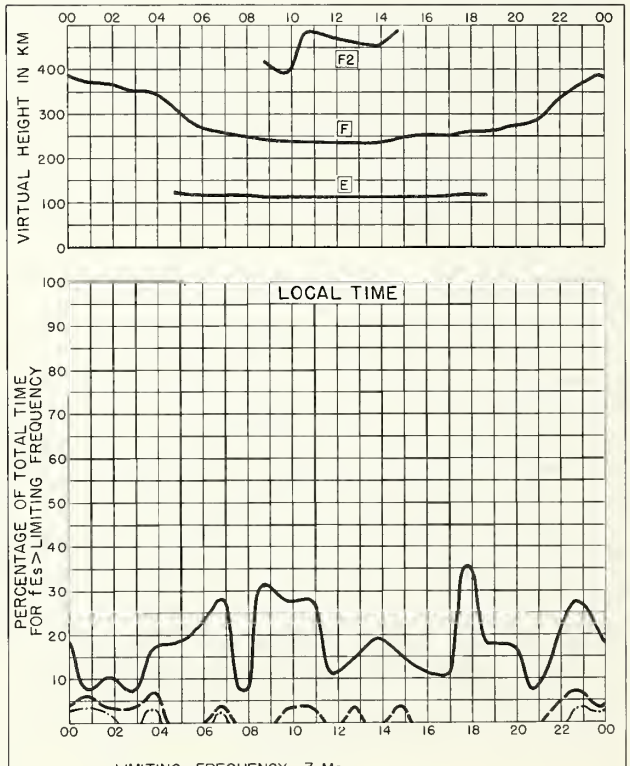


Fig. 56. OSLO , NORWAY APRIL 1958

NBS 490

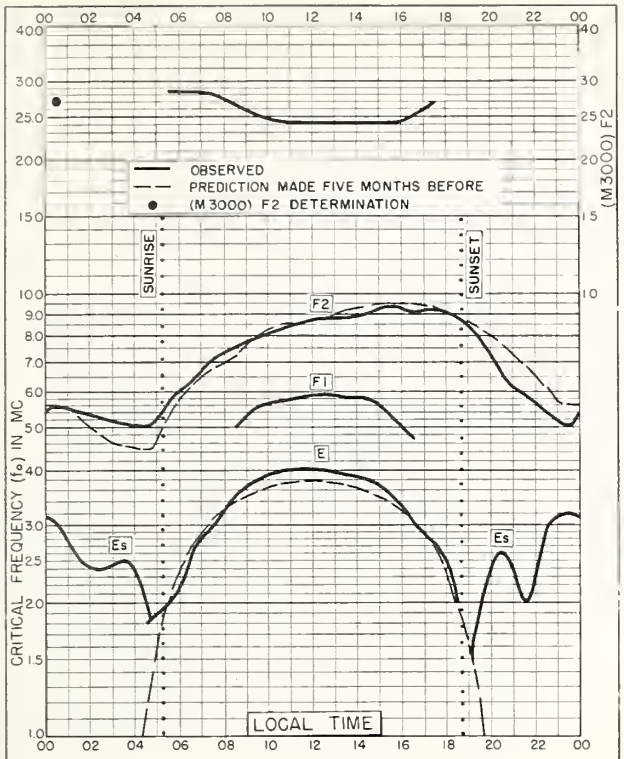


Fig. 57. WINNIPEG, CANADA
49.9°N, 97.4°W APRIL 1958

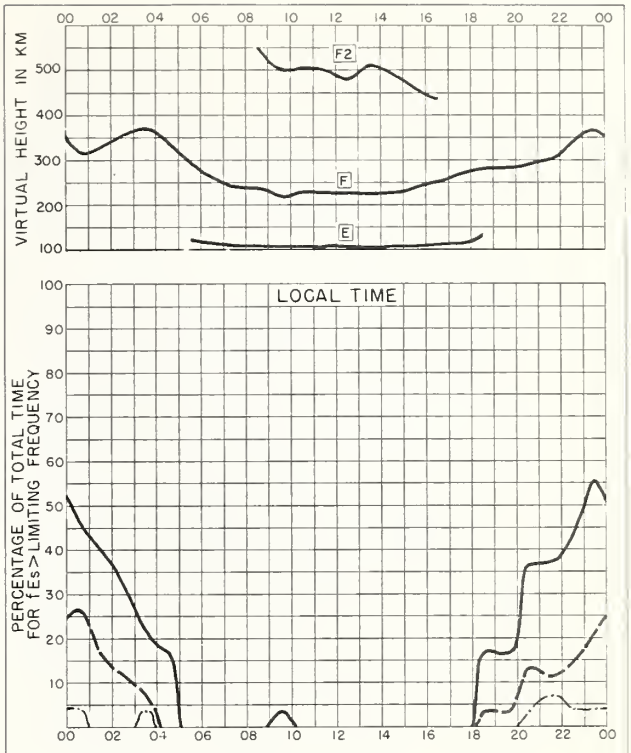


Fig. 58. WINNIPEG, CANADA APRIL 1958

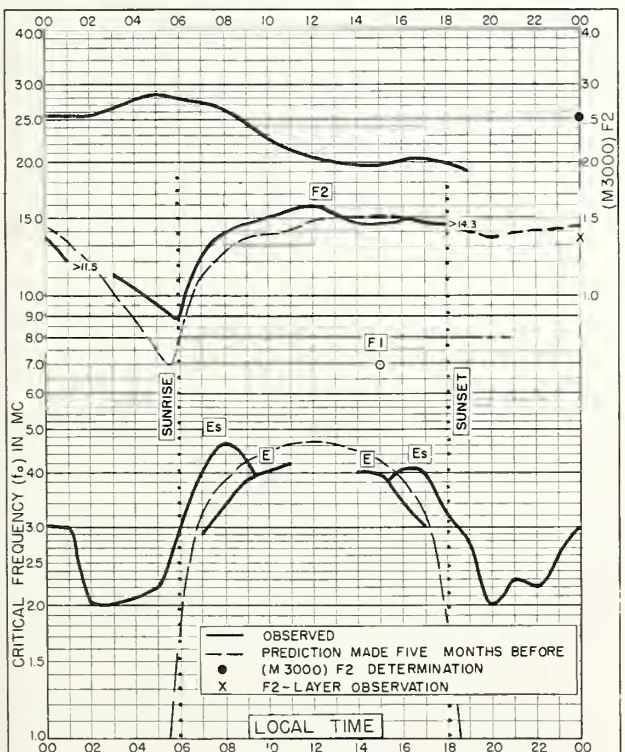


Fig. 59. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E APRIL 1958

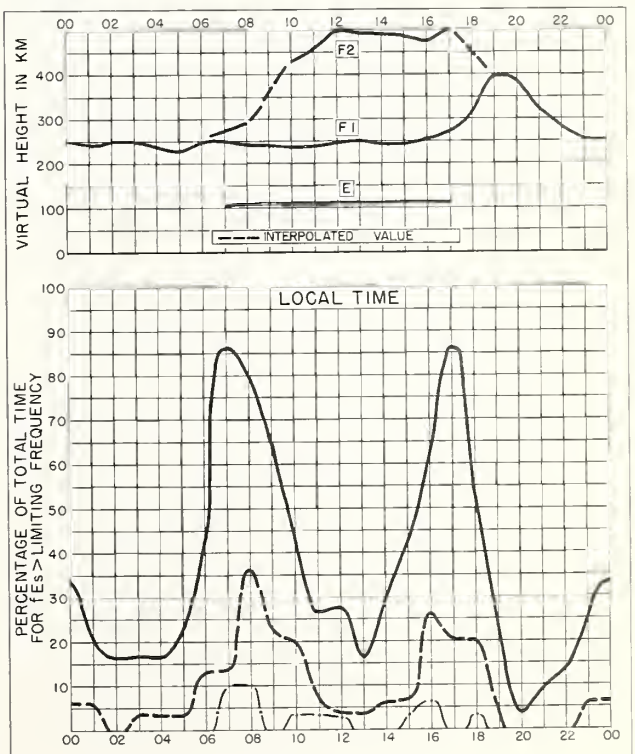


Fig. 60. BUNIA, BELGIAN CONGO APRIL 1958

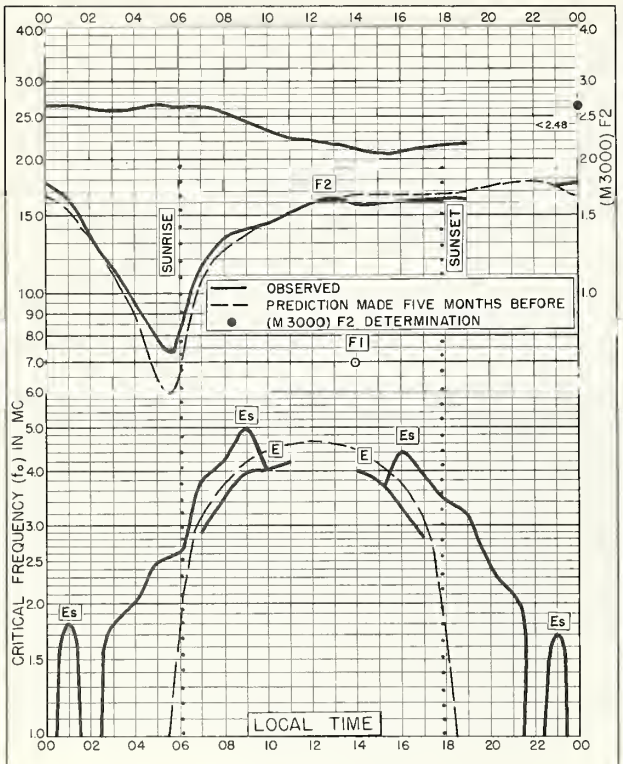
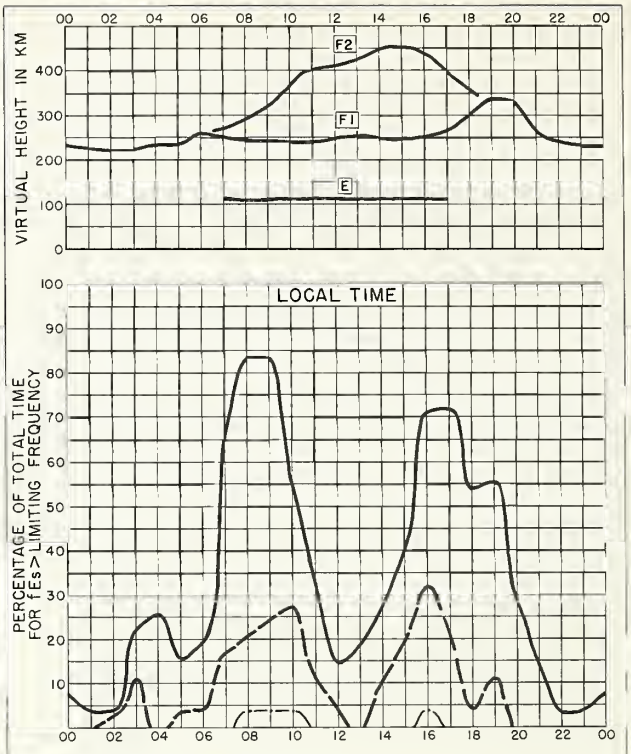


Fig. 61. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E APRIL 1958

NBS 503



APRIL 1958

Fig. 62. LEOPOLDVILLE, BELGIAN CONGO

NBS 490

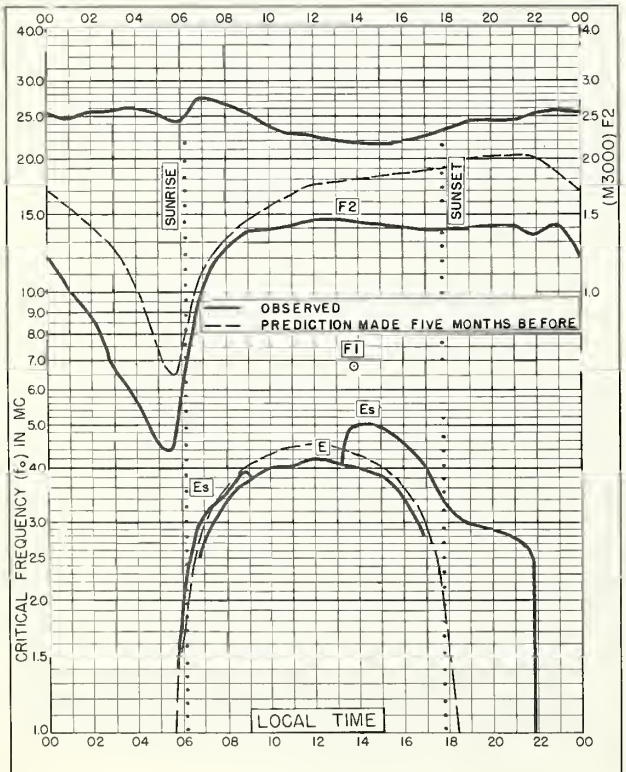
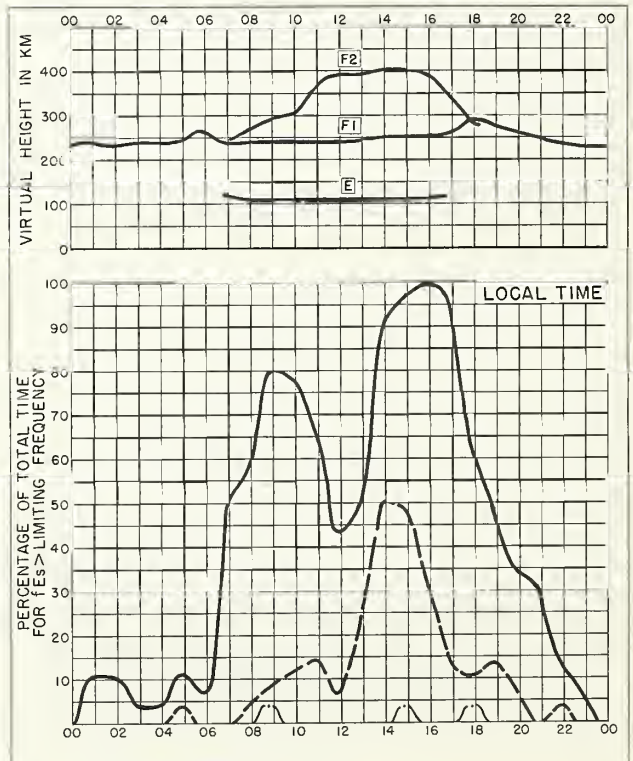


Fig. 63. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E APRIL 1958

NBS 503



APRIL 1958

Fig. 64. ELISABETHVILLE, BELGIAN CONGO

NBS 490

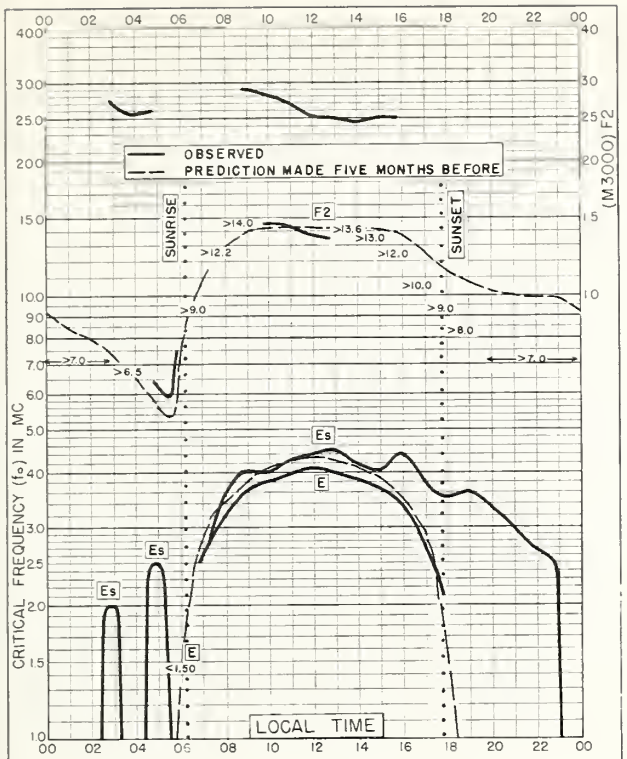


Fig. 65. TOWNSVILLE , AUSTRALIA
19.3°S , 146.7°E APRIL 1958

NBS 503

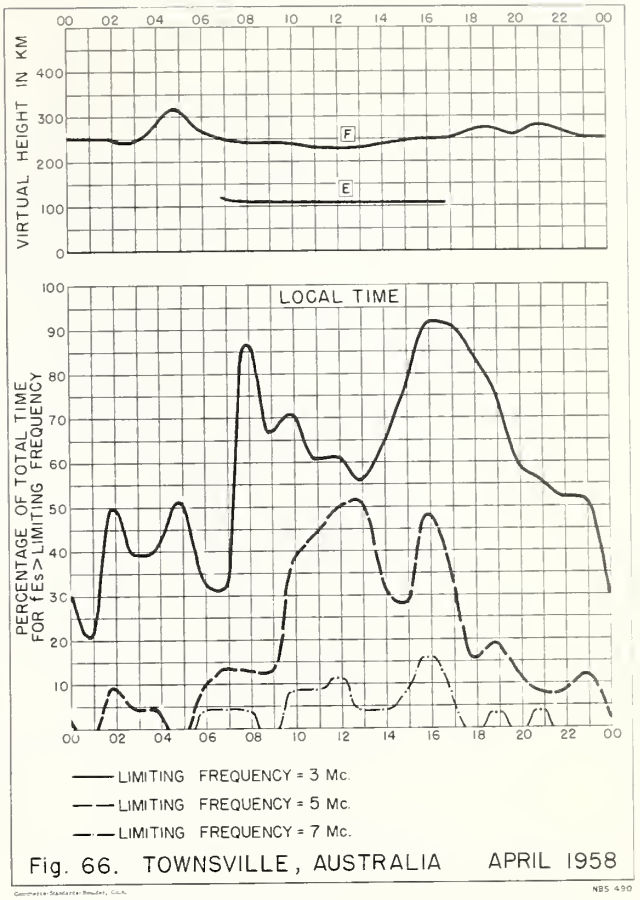


Fig. 66. TOWNSVILLE, AUSTRALIA APRIL 1958

NBS 490

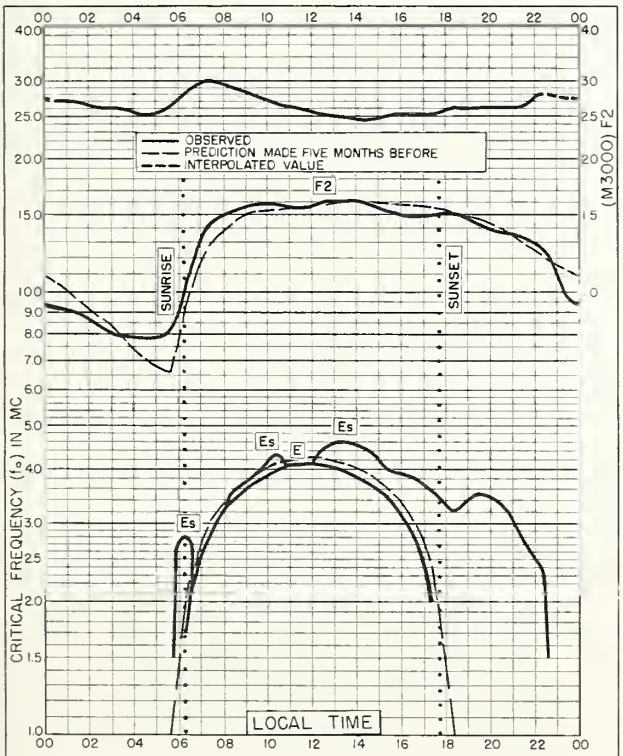


Fig. 67. RAROTONGA I.
21.2°S , 159.8°W APRIL 1958

NBS 503

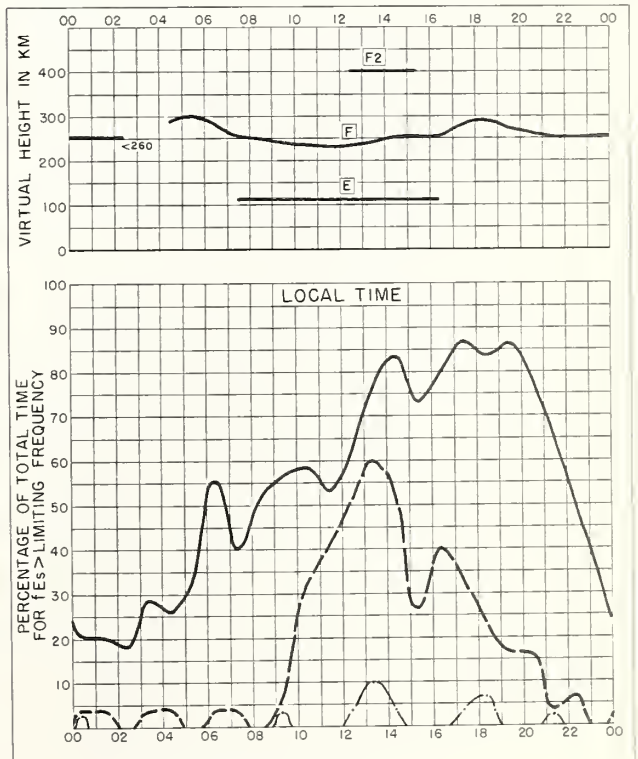


Fig. 68. RAROTONGA I. APRIL 1958

NBS 490

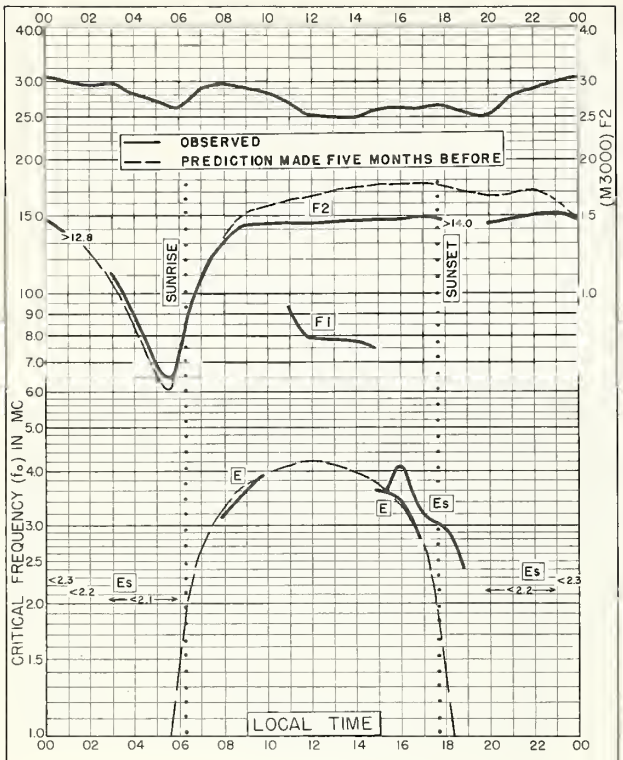


Fig. 69. SAO PAULO, BRAZIL
23.5°S, 46.5°W APRIL 1958

NBS 503

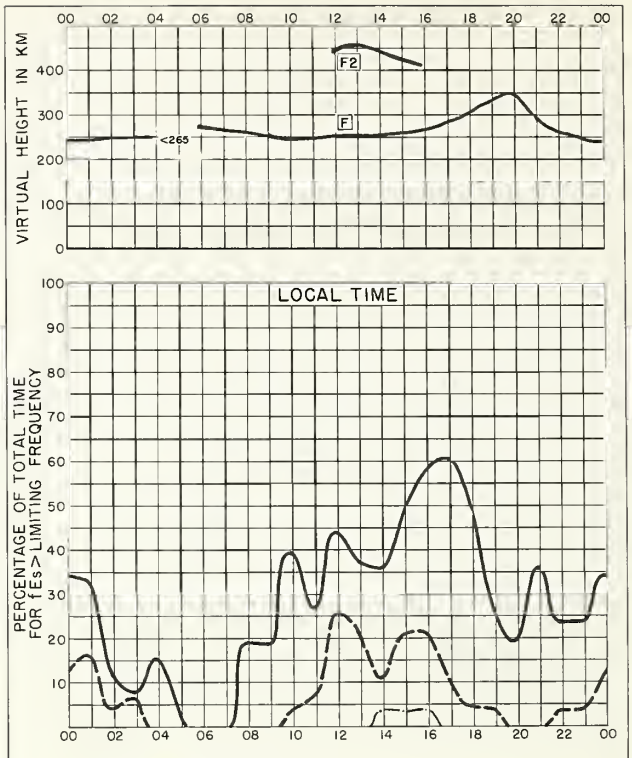


Fig. 70. SAO PAULO, BRAZIL APRIL 1958

NBS 490

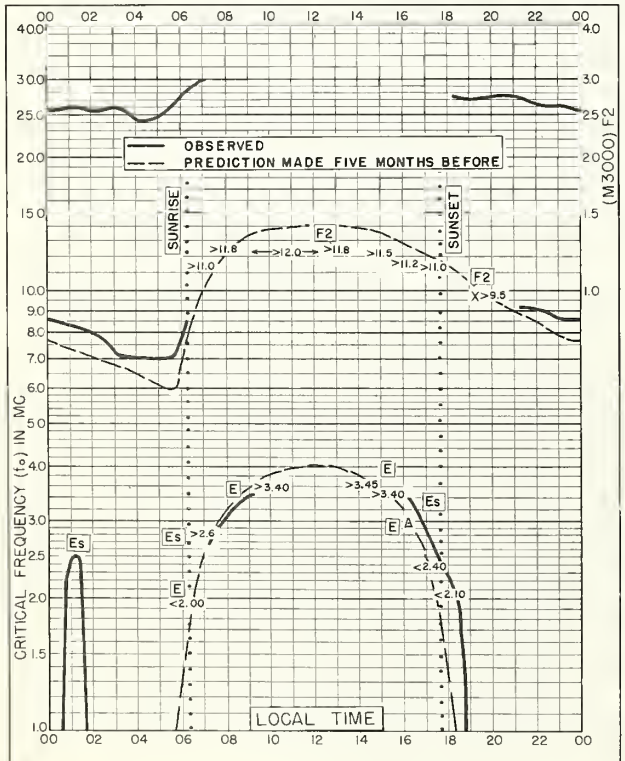


Fig. 71. BRISBANE, AUSTRALIA
27.5°S, 152.9°E APRIL 1958

NBS 503

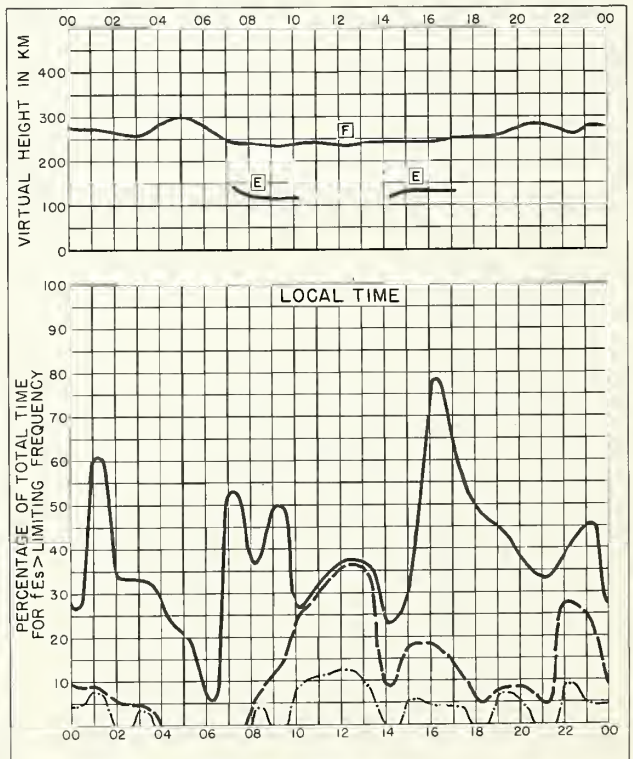


Fig. 72. BRISBANE, AUSTRALIA APRIL 1958

NBS 490

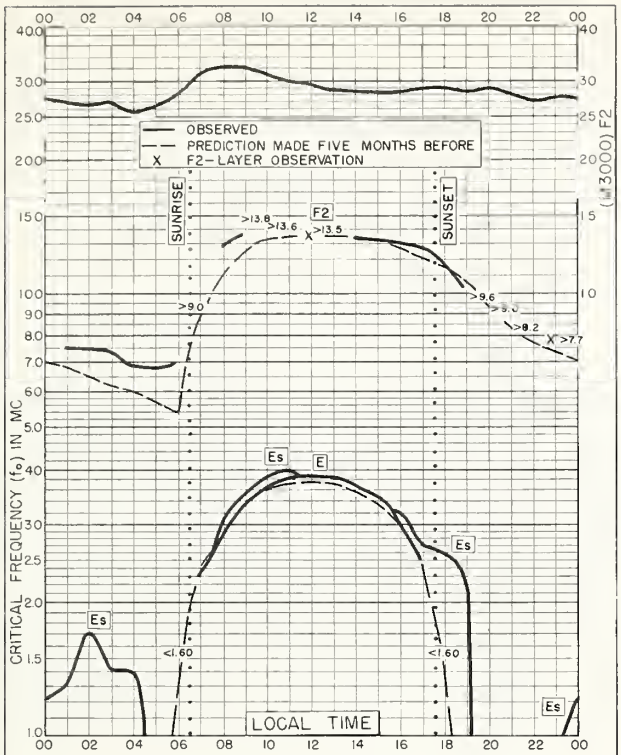


Fig. 73. CANBERRA, AUSTRALIA
35.3°S, 149.0°E APRIL 1958

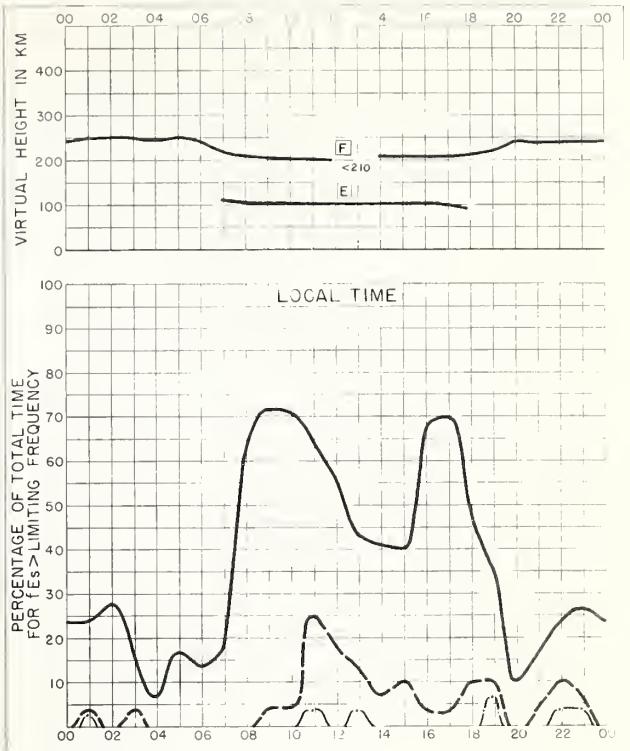


Fig. 74. CANBERRA, AUSTRALIA APRIL 1958

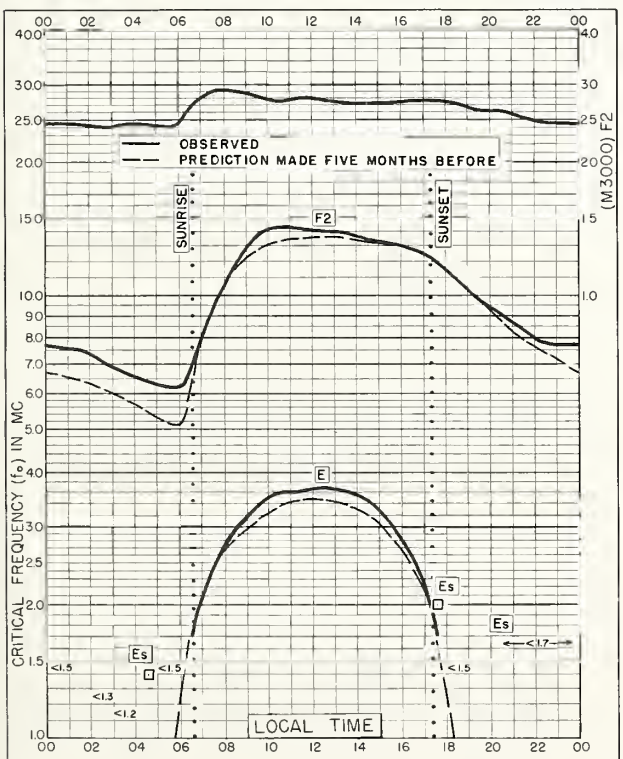


Fig. 75. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E APRIL 1958

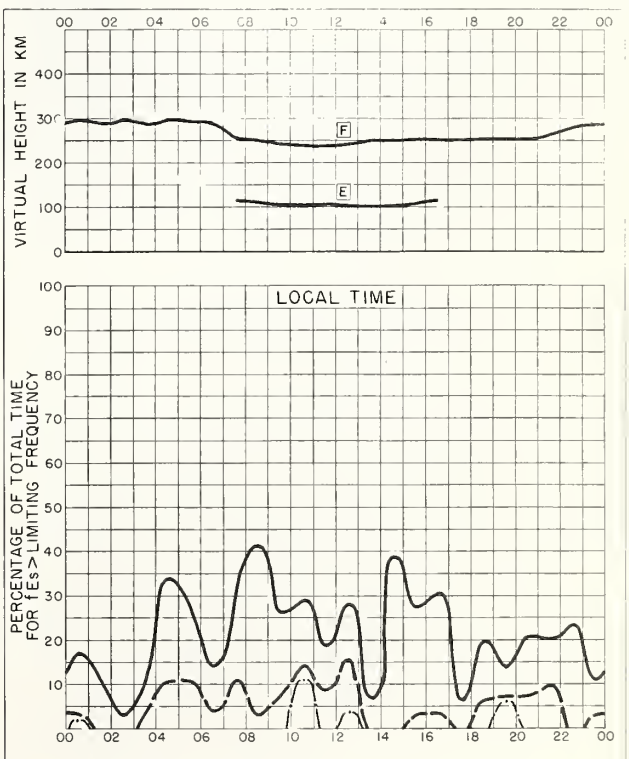


Fig. 76. CHRISTCHURCH, NEW ZEALAND APRIL 1958

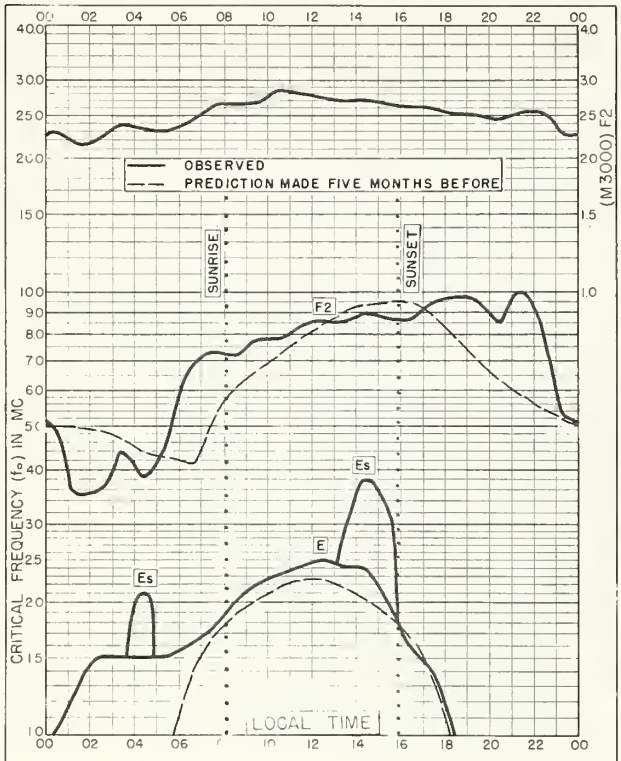


Fig. 77. CAPE HALLETT
72.3°S, 170.3°E APRIL 1958

NBS 503

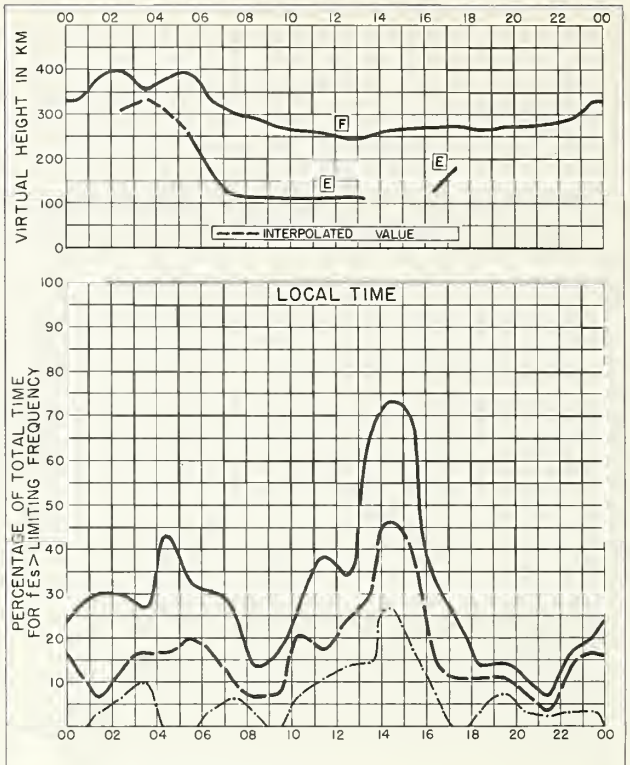


Fig. 78. CAPE HALLETT APRIL 1958

NBS 490

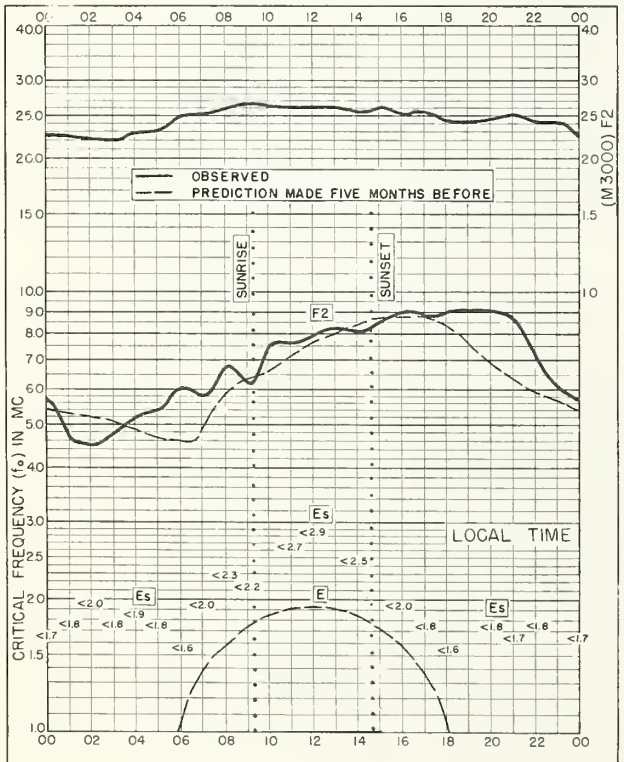


Fig. 79. SCOTT BASE
77.8°S, 166.8°E APRIL 1958

NBS 503

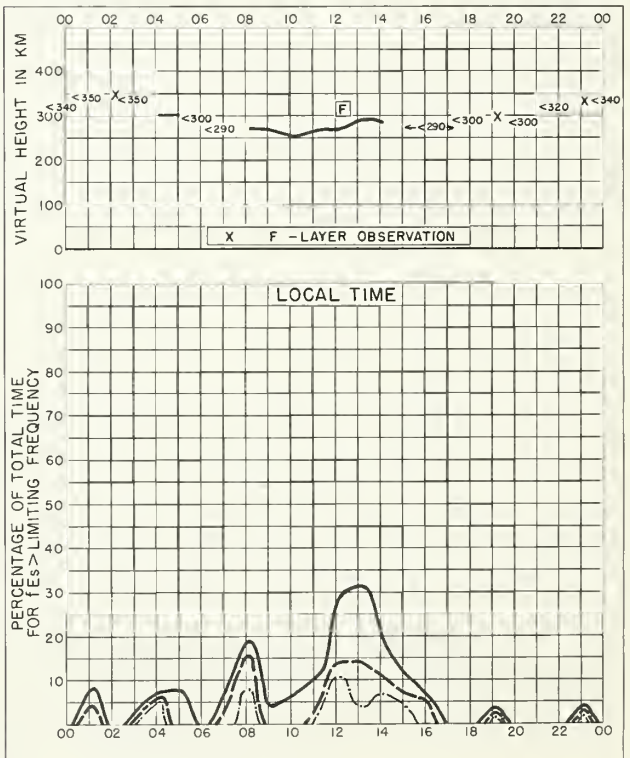


Fig. 80. SCOTT BASE APRIL 1958

NBS 490

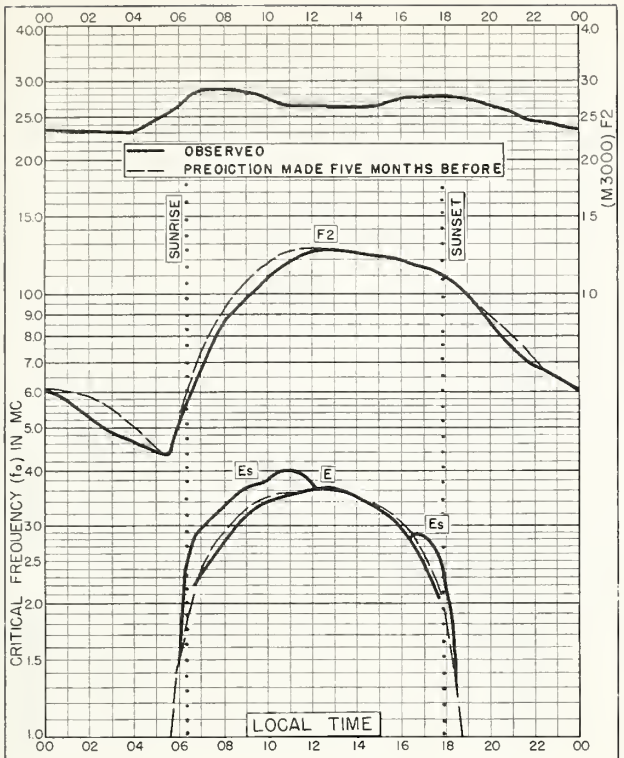


Fig. 81. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E MARCH 1958

NBS 503

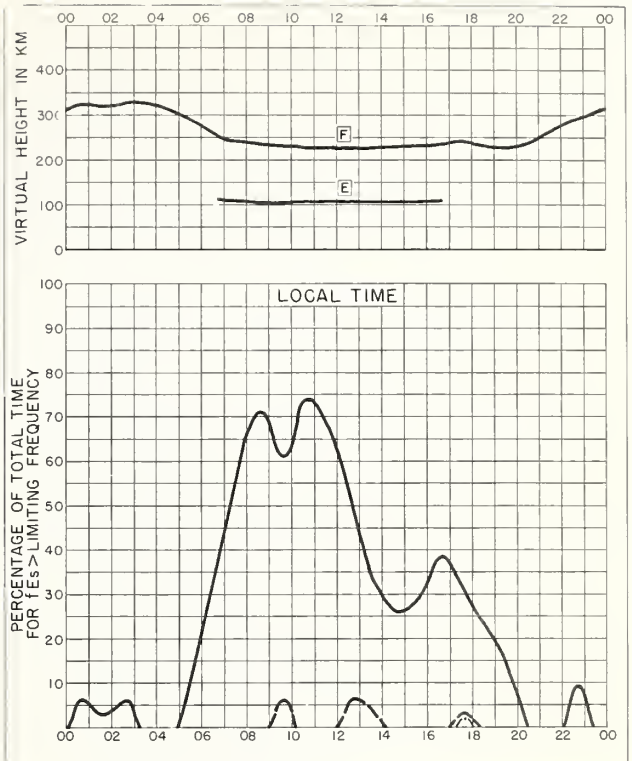


Fig. 82. LINDAU/HARZ, GERMANY MARCH 1958

NBS 490

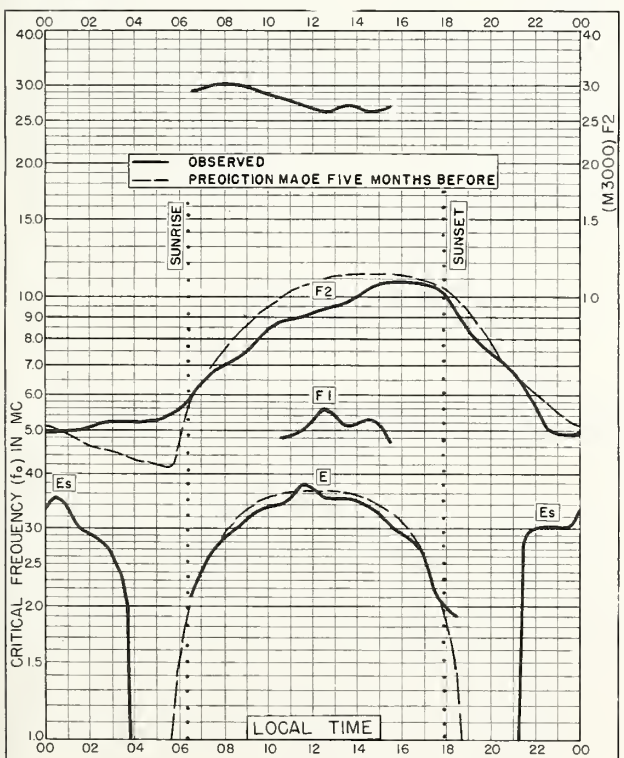


Fig. 83. WINNIPEG, CANADA
49.9°N, 97.4°W MARCH 1958

NBS 503

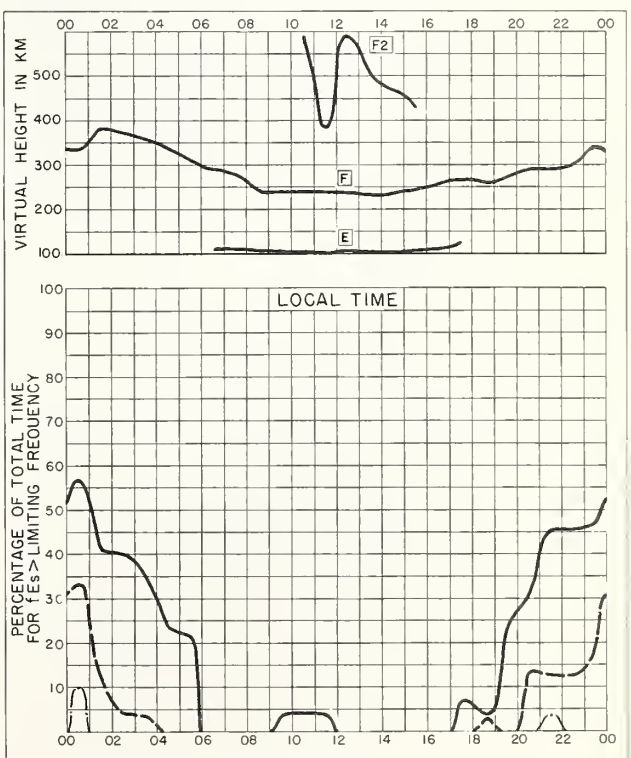


Fig. 84. WINNIPEG, CANADA MARCH 1958

NBS 490

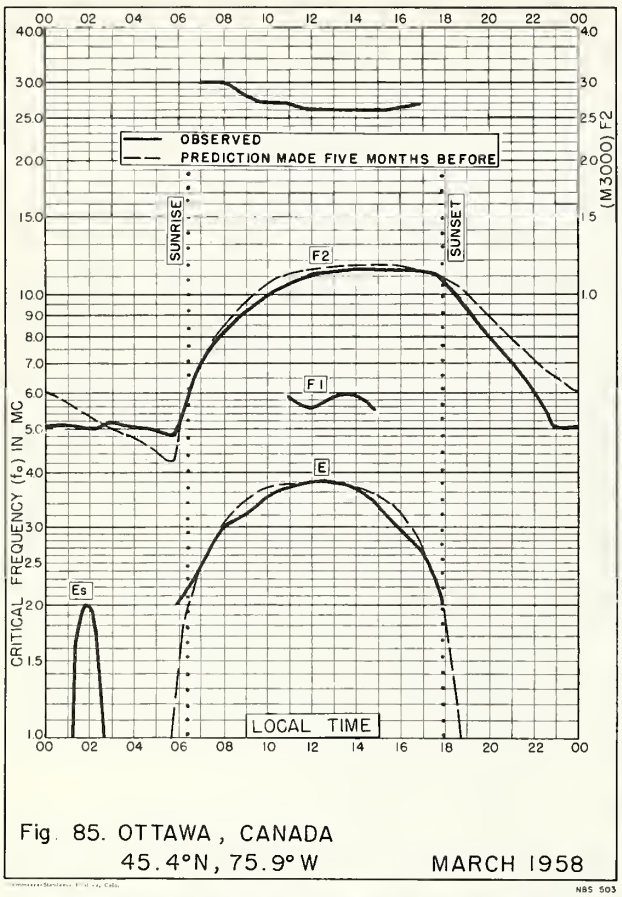


Fig. 85. OTTAWA, CANADA
45.4°N, 75.9°W MARCH 1958

NBS 503

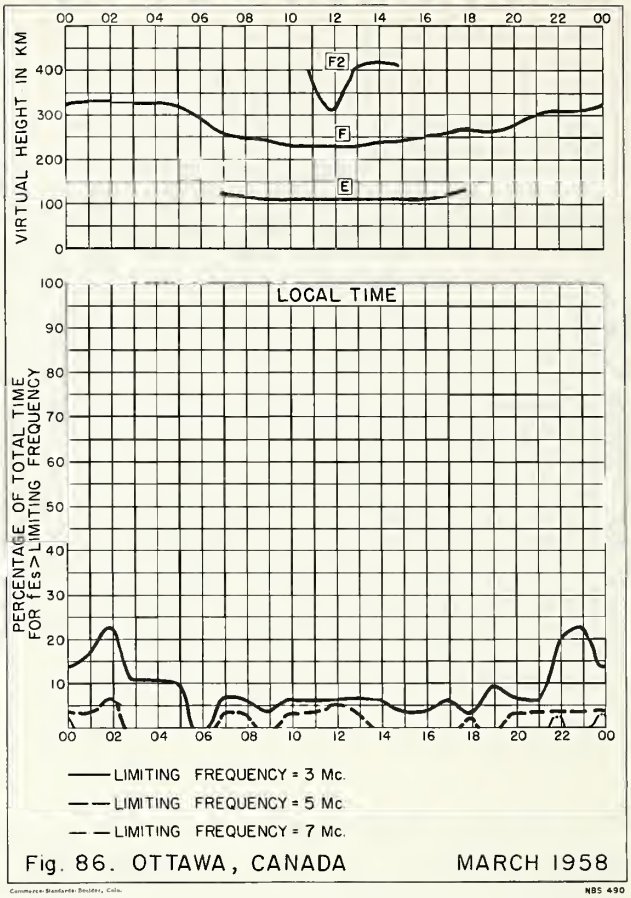


Fig. 86. OTTAWA, CANADA MARCH 1958

NBS 490

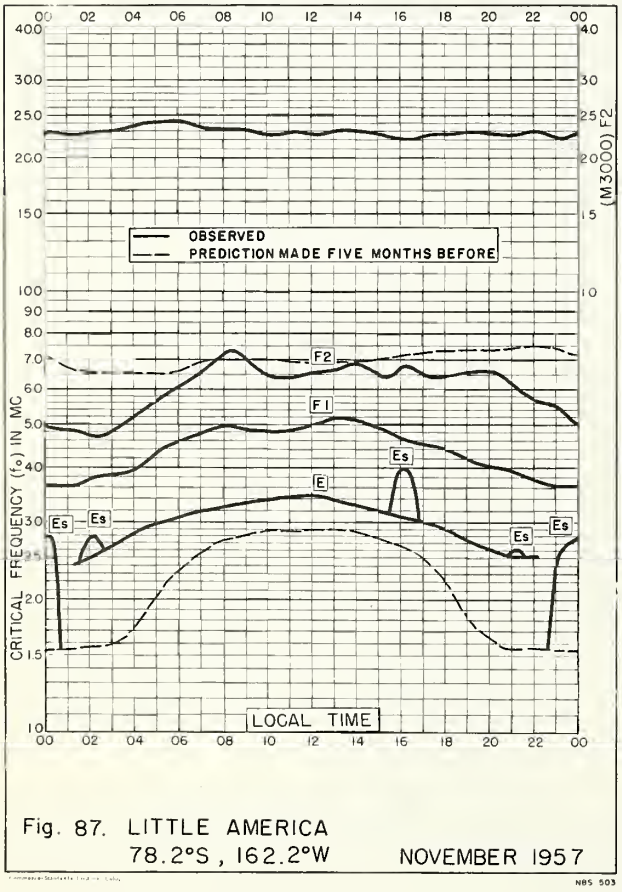


Fig. 87. LITTLE AMERICA
78.2°S, 162.2°W NOVEMBER 1957

NBS 503

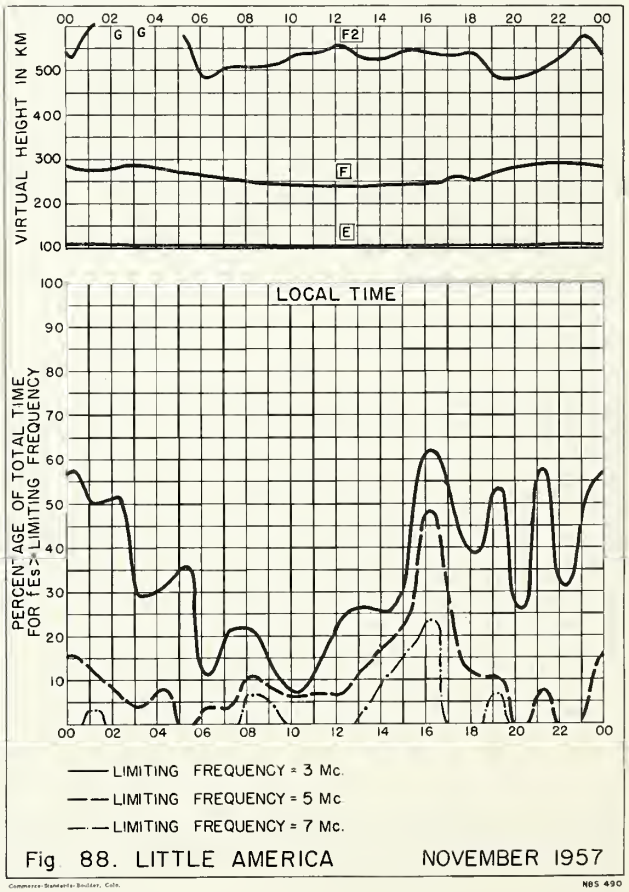


Fig. 88. LITTLE AMERICA NOVEMBER 1957

NBS 490

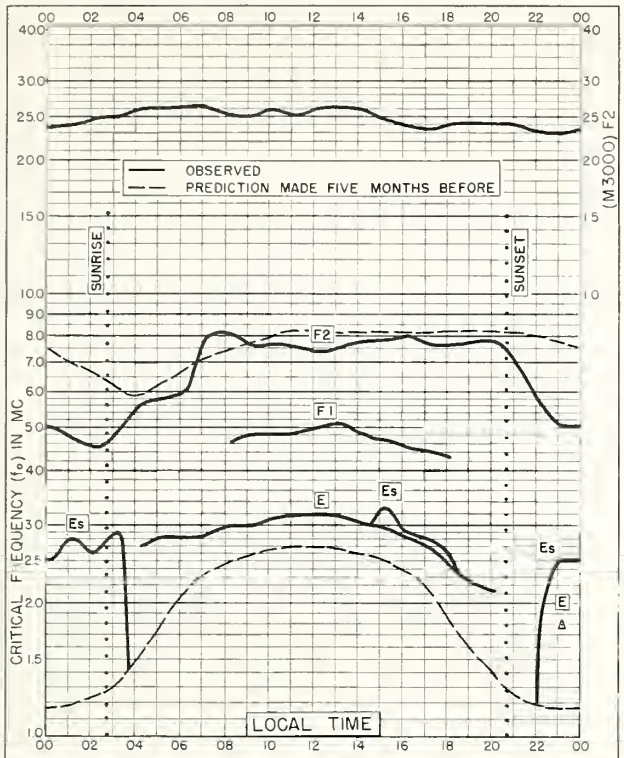


Fig. 89. LITTLE AMERICA
78.2°S, 162.2°W OCTOBER 1957

NBS 503

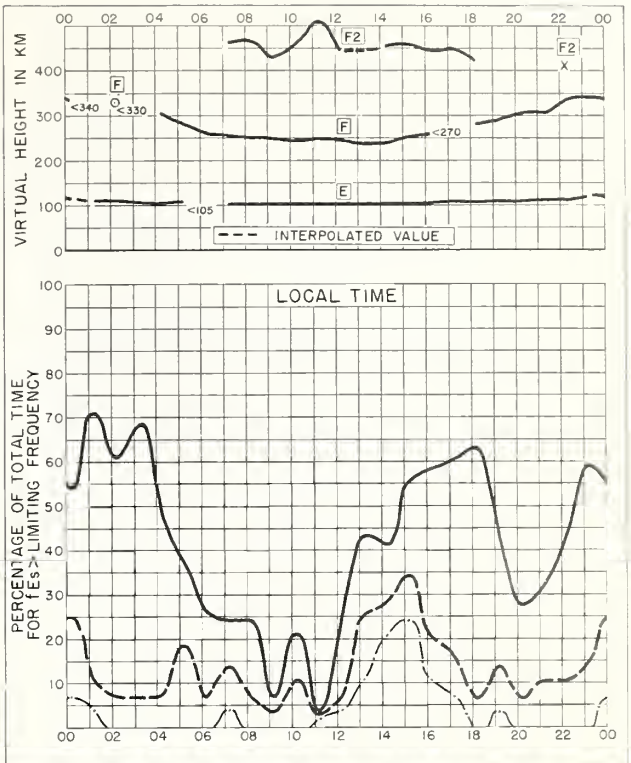


Fig. 90. LITTLE AMERICA OCTOBER 1957

NBS 490

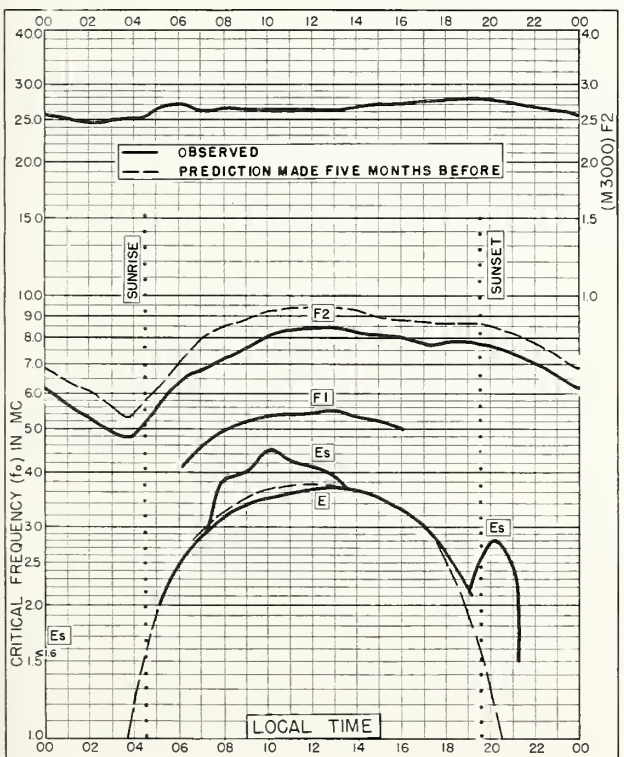


Fig. 91. SVERDLOVSK, U.S.S.R.
56.7°N, 61.1°E AUGUST 1957

NBS 503

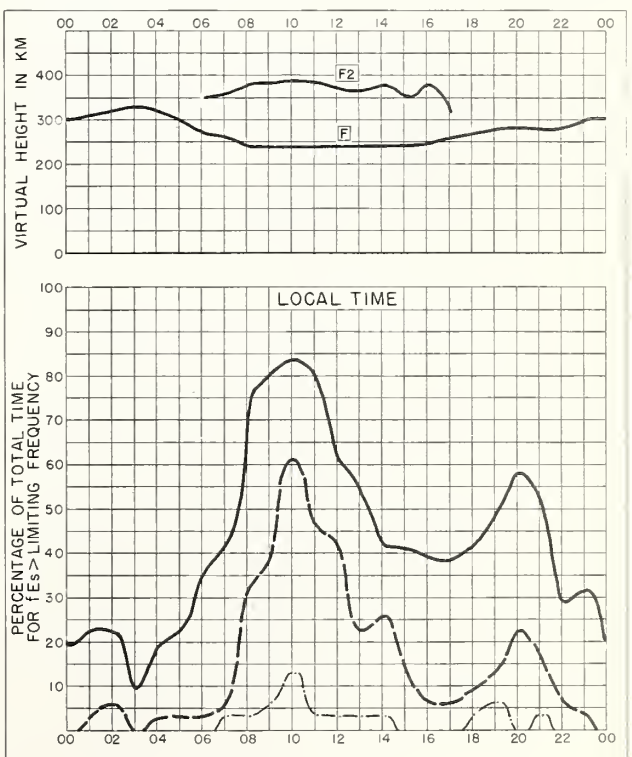


Fig. 92. SVERDLOVSK, U.S.S.R. AUGUST 1957

NBS 490

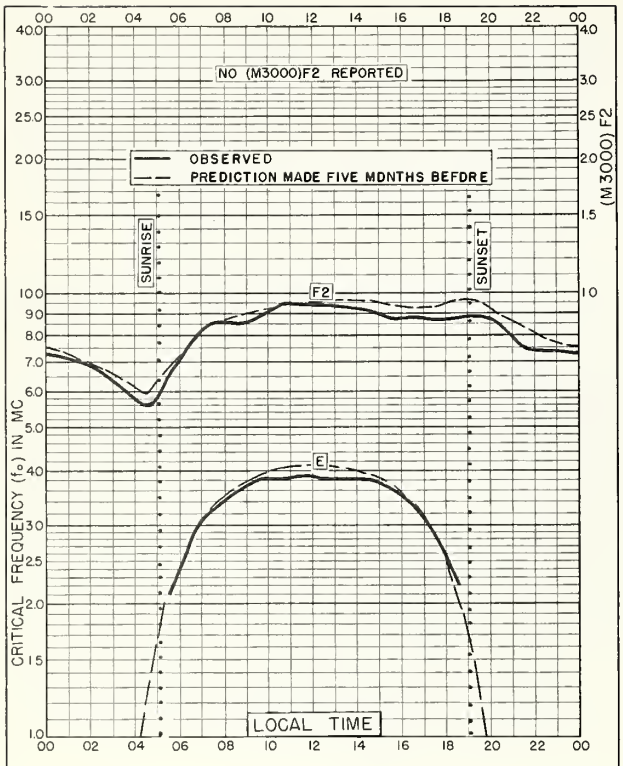


Fig. 93. MONTE CAPELLINO, ITALY
44.6°N, 9.0°E AUGUST 1957

NBS 503

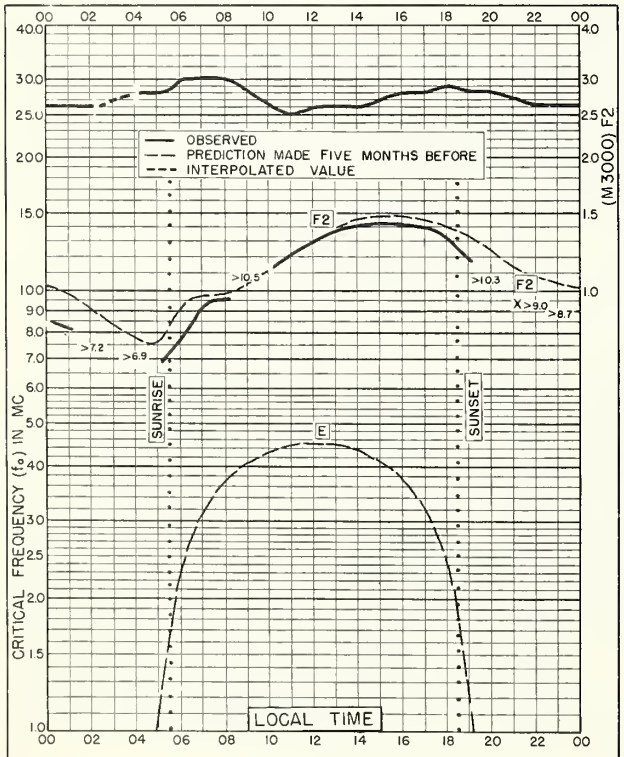


Fig. 94. DELHI, INDIA
28.6°N, 77.2°E AUGUST 1957

NBS 503

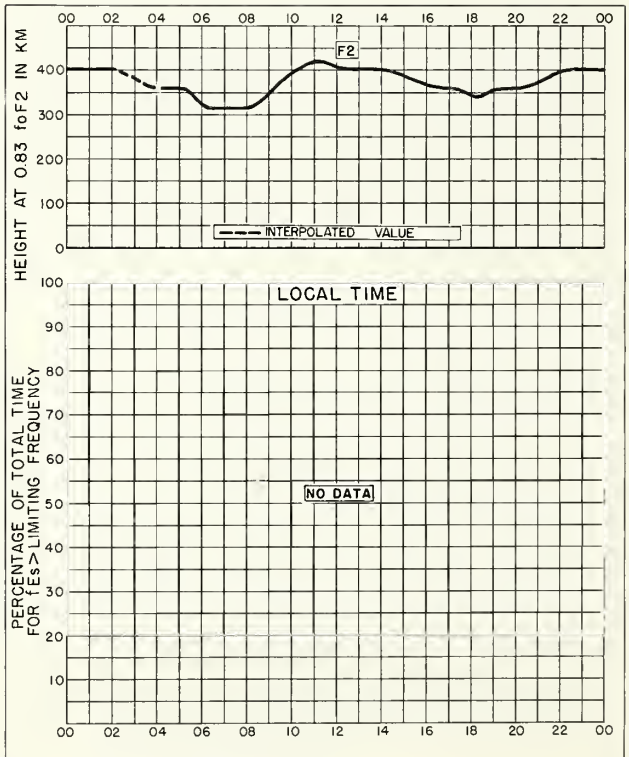


Fig. 95. DELHI, INDIA AUGUST 1957

Commerce-Standards-Boulder, Colo.

NBS 490

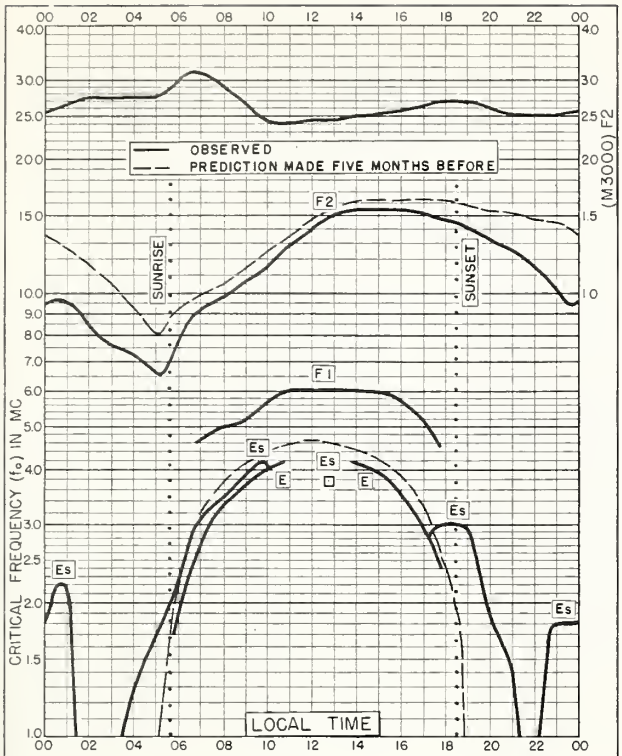


Fig. 96. AHMEDABAD, INDIA
23.0°N, 72.5°E AUGUST 1957

NBS 503

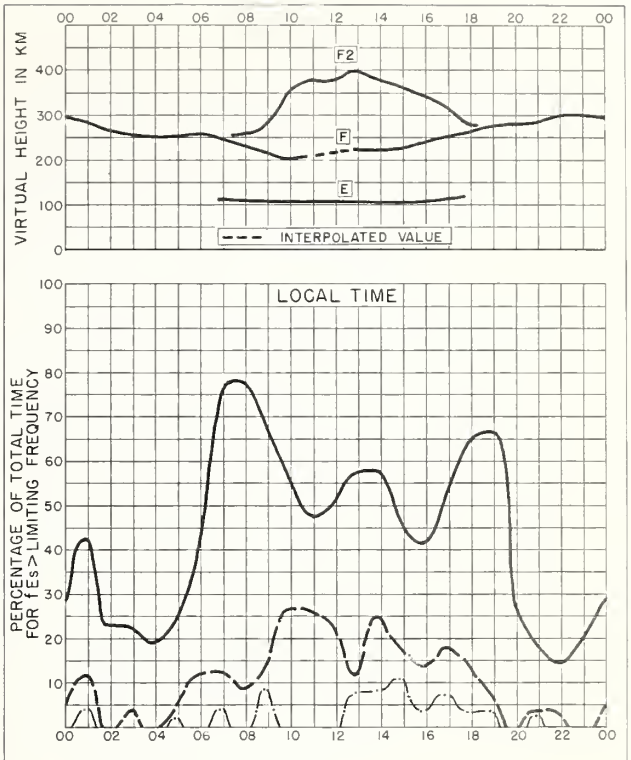


Fig. 97. AHMEDABAD, INDIA AUGUST 1957

NBS 490

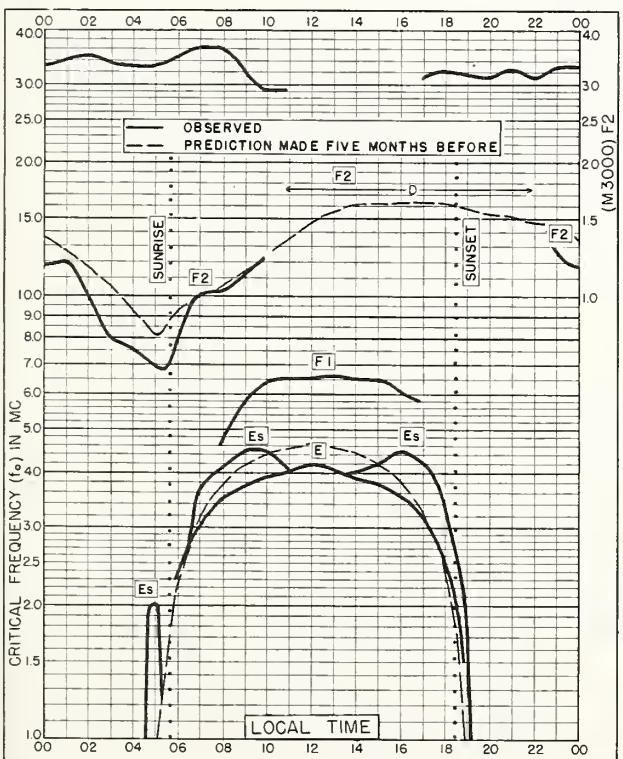


Fig. 98. CALCUTTA, INDIA
22.9°N, 88.5°E AUGUST 1957

NBS 503

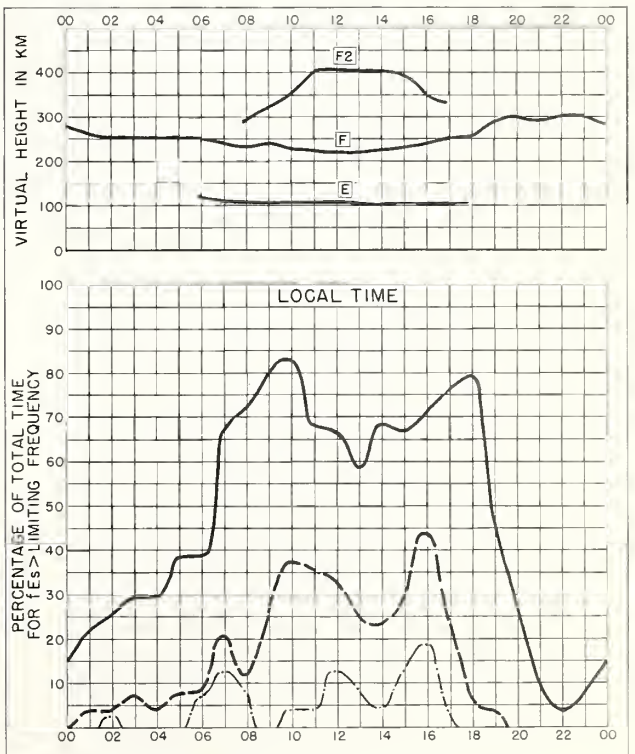


Fig. 99. CALCUTTA, INDIA AUGUST 1957

NBS 490

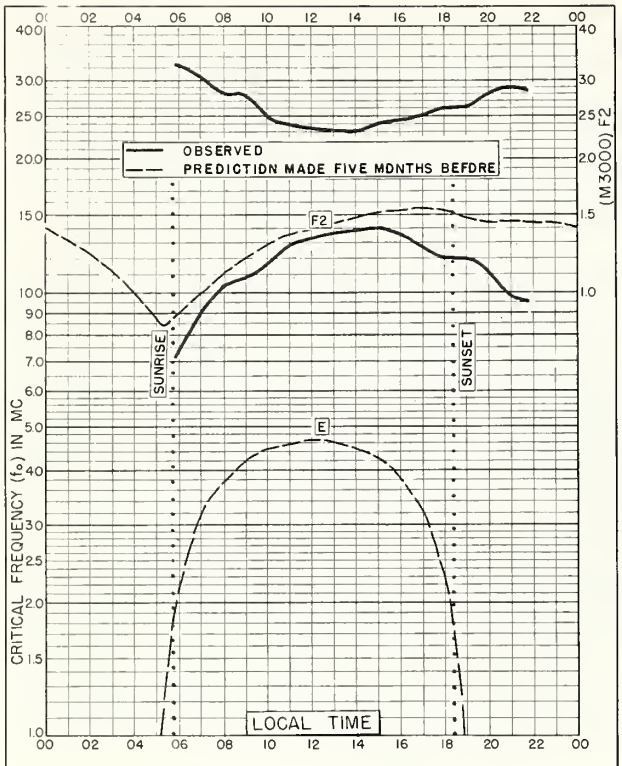


Fig. 100. BOMBAY, INDIA
19.0°N, 73.0°E AUGUST 1957

NBS 503

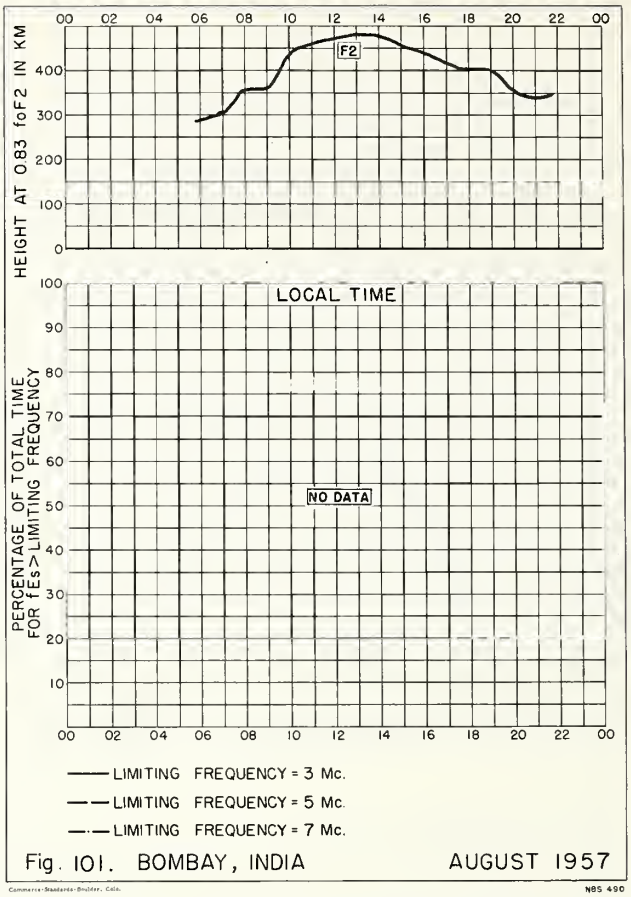


Fig. 101. BOMBAY, INDIA AUGUST 1957

NBS 490

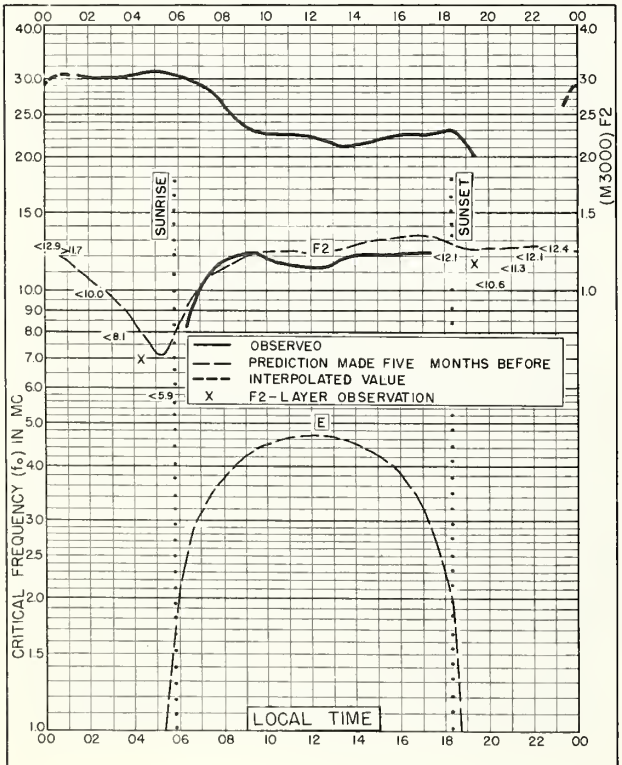


Fig. 102. MADRAS, INDIA
13.1°N, 80.3°E AUGUST 1957

NBS 503

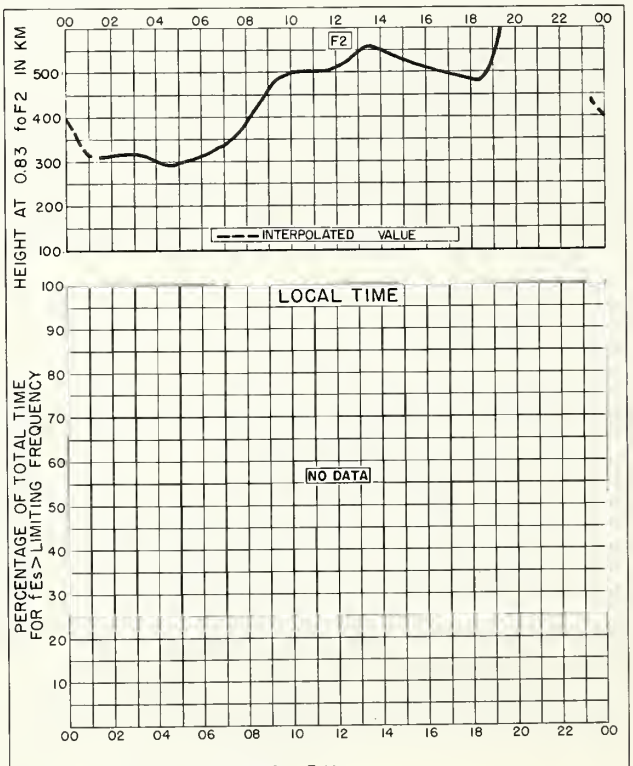


Fig. 103. MADRAS, INDIA AUGUST 1957

NBS 490

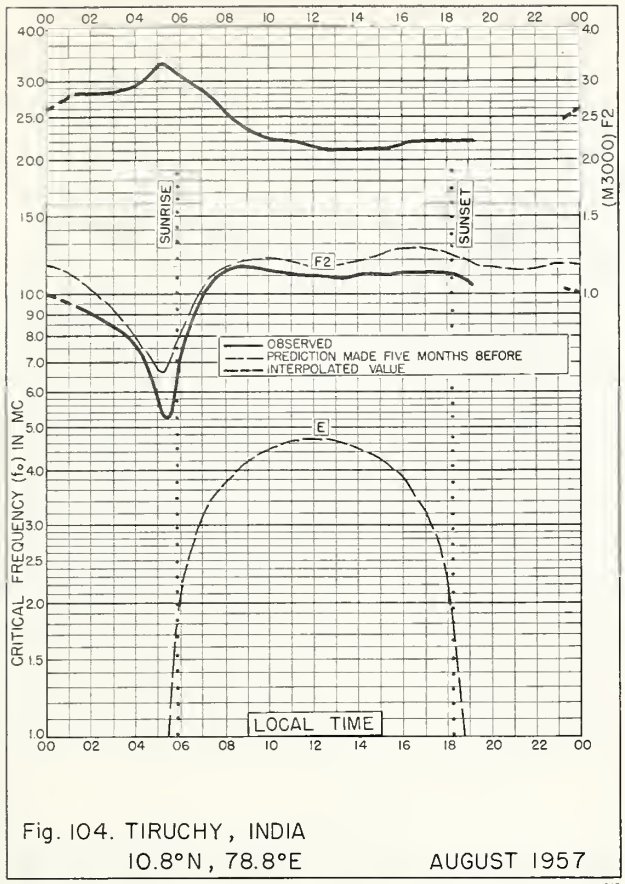


Fig. 104. TIRUCHY, INDIA
10.8°N, 78.8°E AUGUST 1957

NBS 503

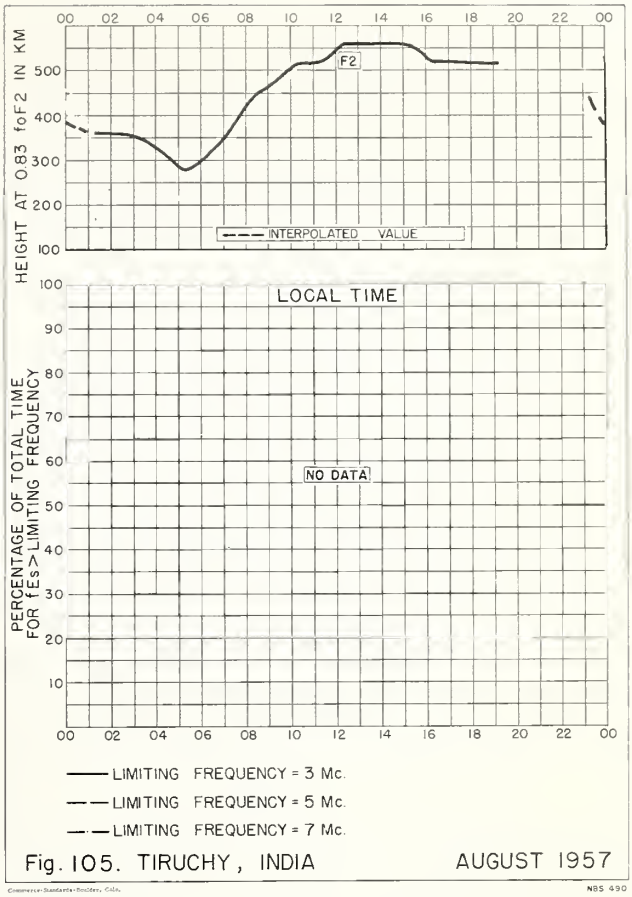


Fig. 105. TIRUCHY, INDIA AUGUST 1957

NBS 490

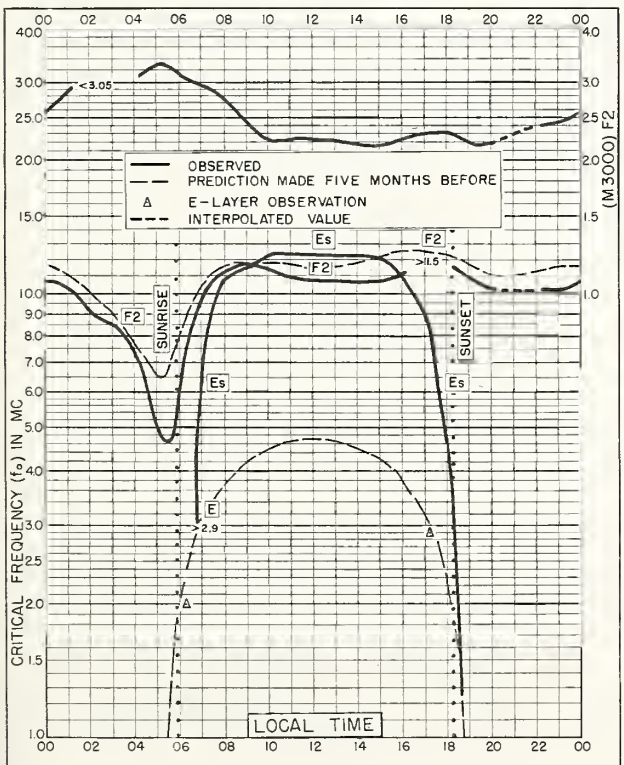


Fig. 106. KODAIKANAL, INDIA
10.2°N, 77.5°E AUGUST 1957

NBS 503

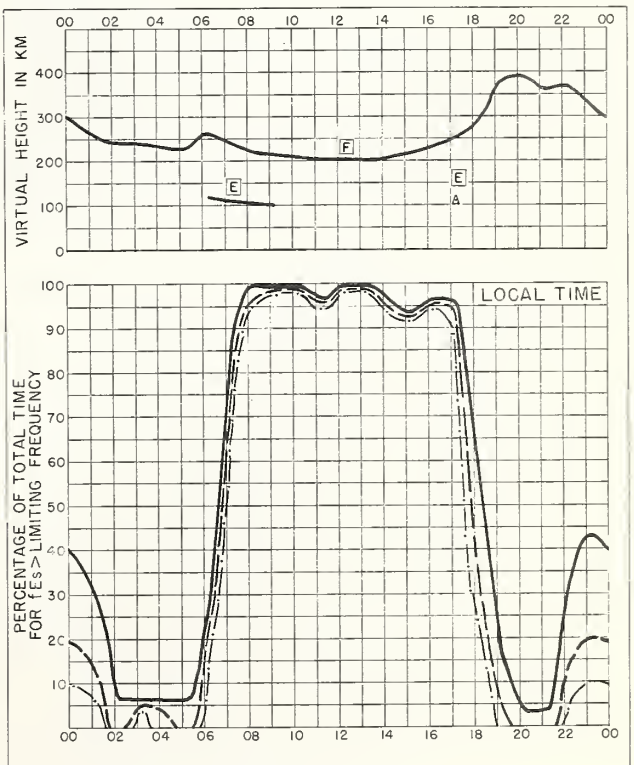


Fig. 107. KODAIKANAL, INDIA AUGUST 1957

NBS 490

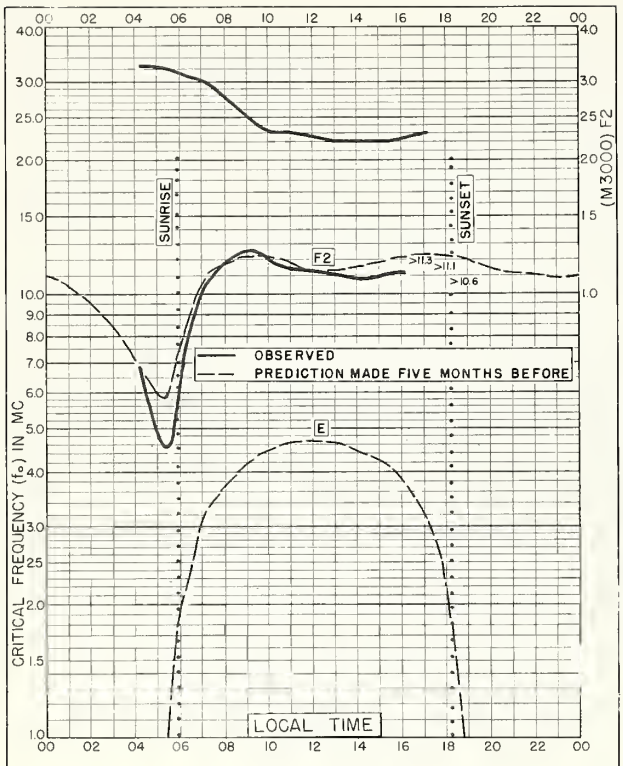


Fig. 108. TRIVANDRUM, INDIA
8.5°N, 77.0°E AUGUST 1957

NBS 503

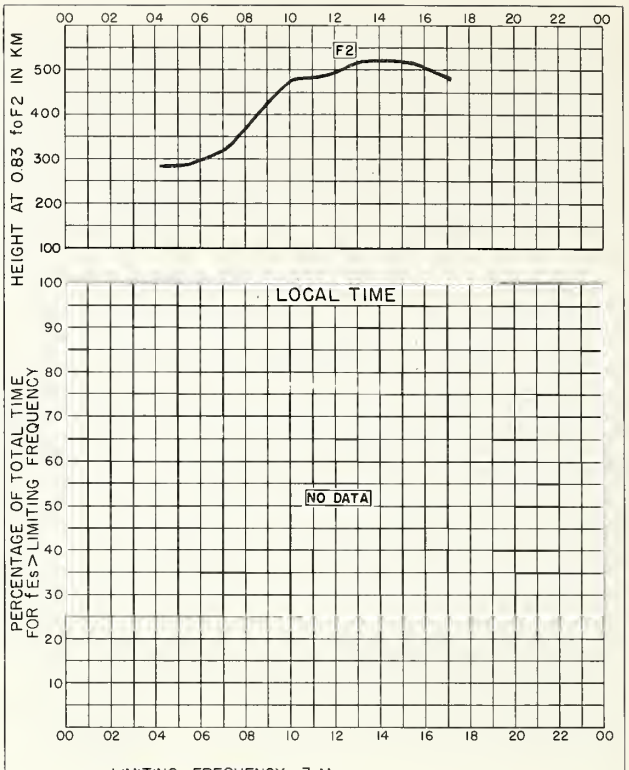


Fig. 109. TRIVANDRUM, INDIA AUGUST 1957

NBS 490

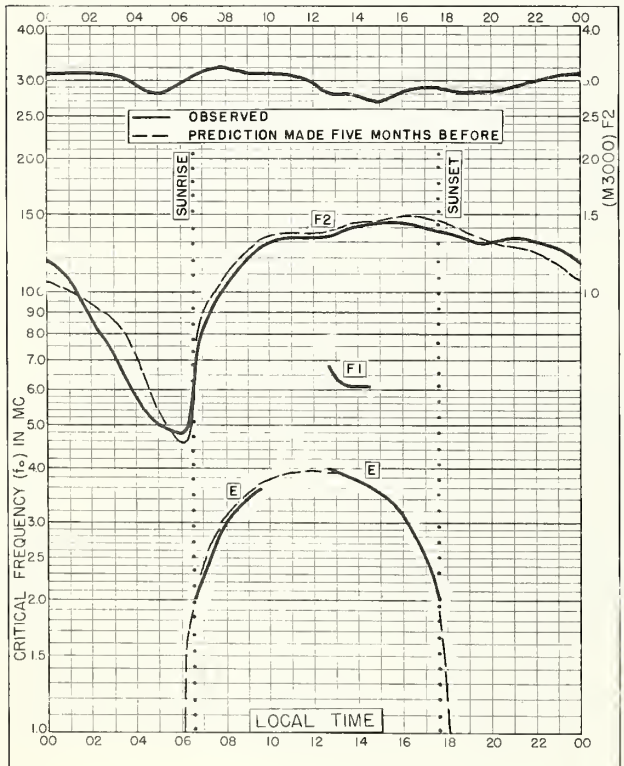


Fig. 110. TUCUMAN, ARGENTINA
26.9°S, 65.4°W AUGUST 1957

NBS 503

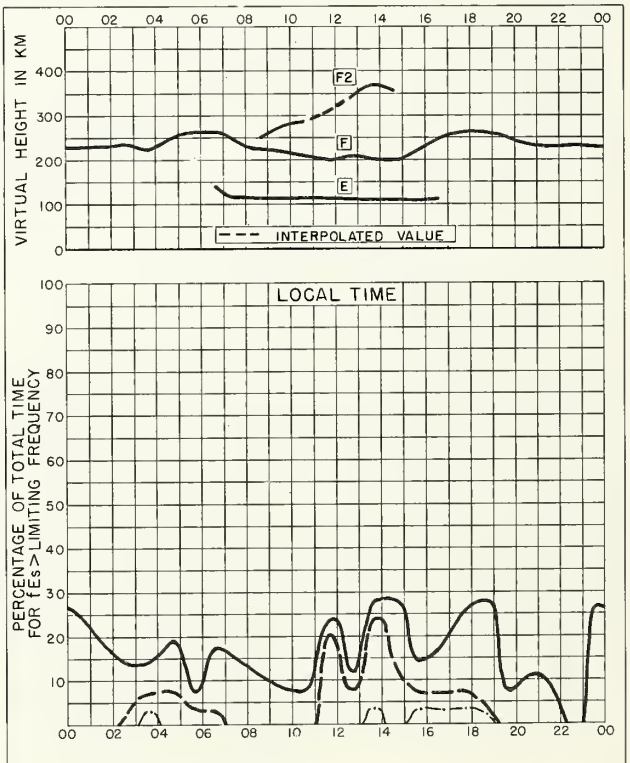


Fig. 111. TUCUMAN, ARGENTINA AUGUST 1957

NBS 490

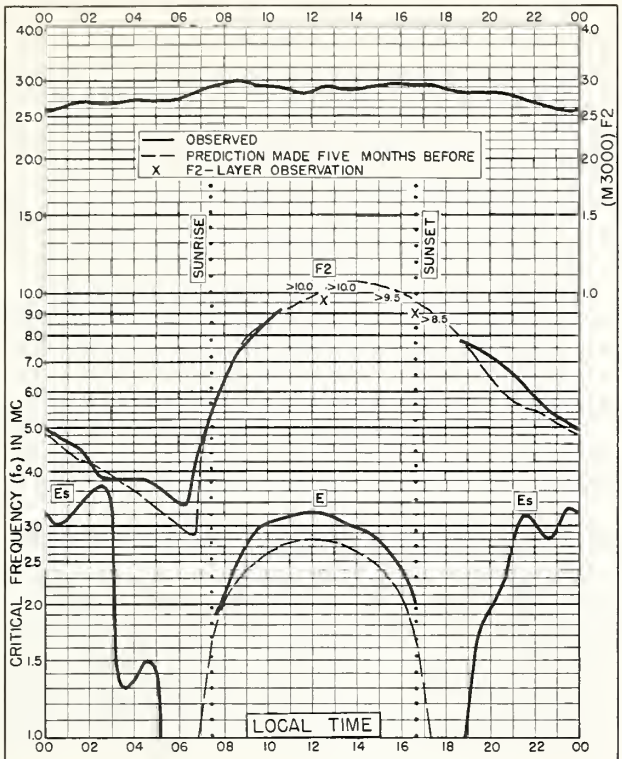


Fig. 112. MACQUARIE I.
54.5°S, 159.0°E AUGUST 1957

NBS 503

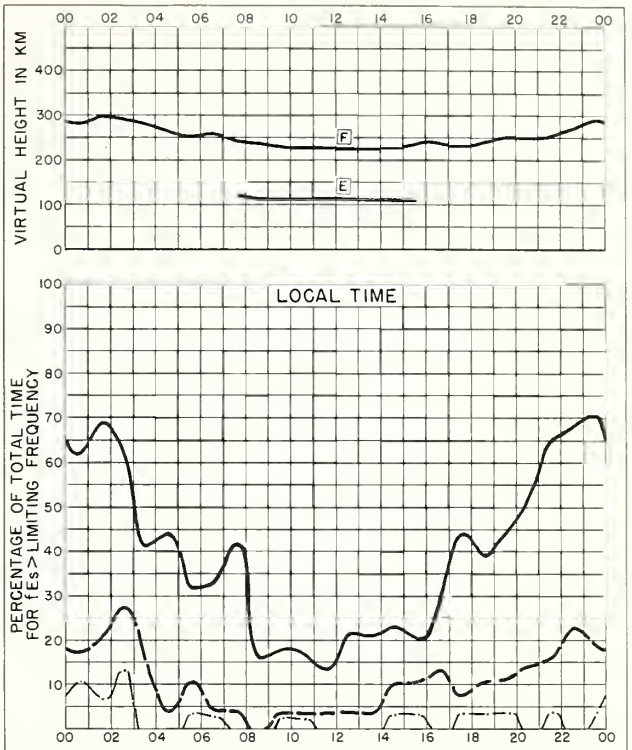


Fig. 113. MACQUARIE I. AUGUST 1957

NBS 490

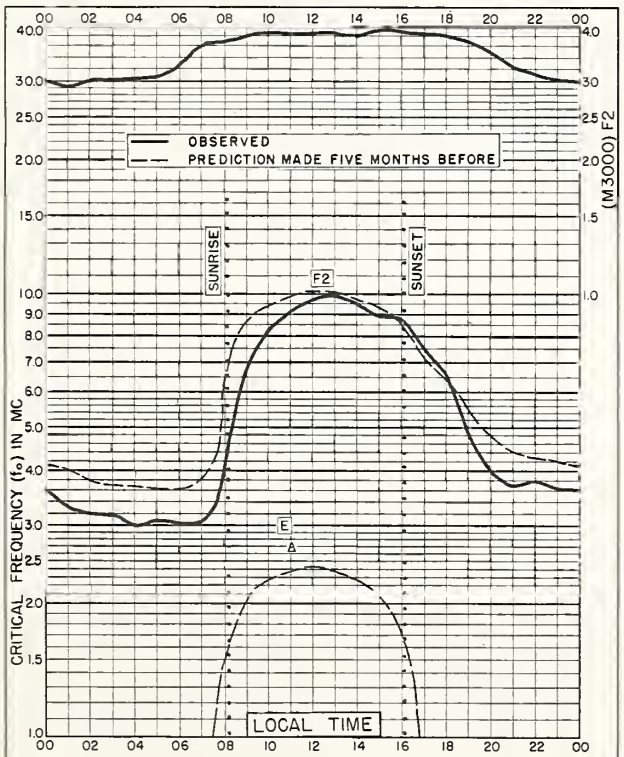


Fig. 114. DECEPCION I.
63.0°S, 60.7°W AUGUST 1957

NBS 503

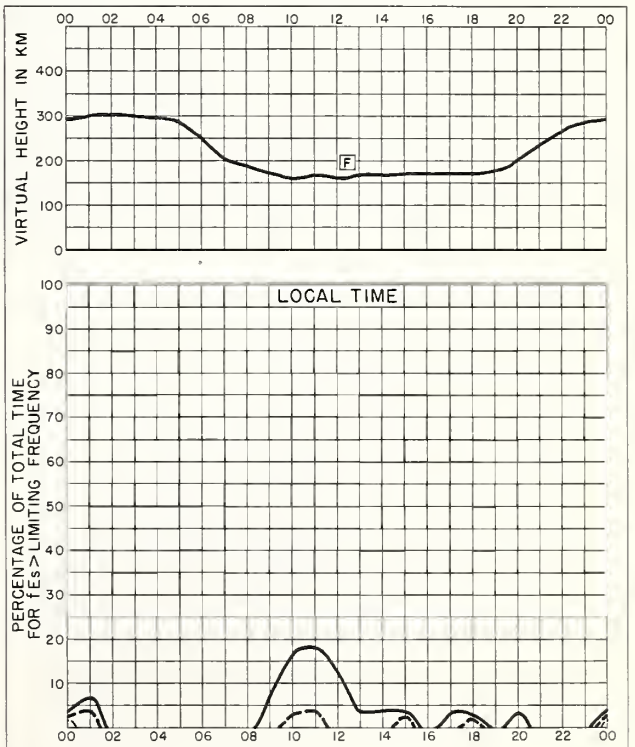


Fig. 115. DECEPCION I. AUGUST 1957

NBS 490

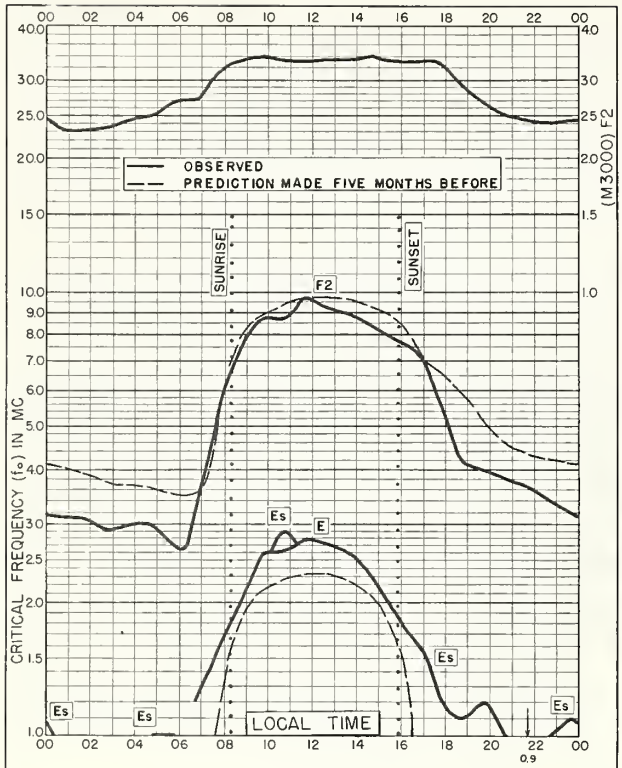


Fig. 116. PORT LOCKROY
64.8°S, 63.5° W AUGUST 1957

NBS 503

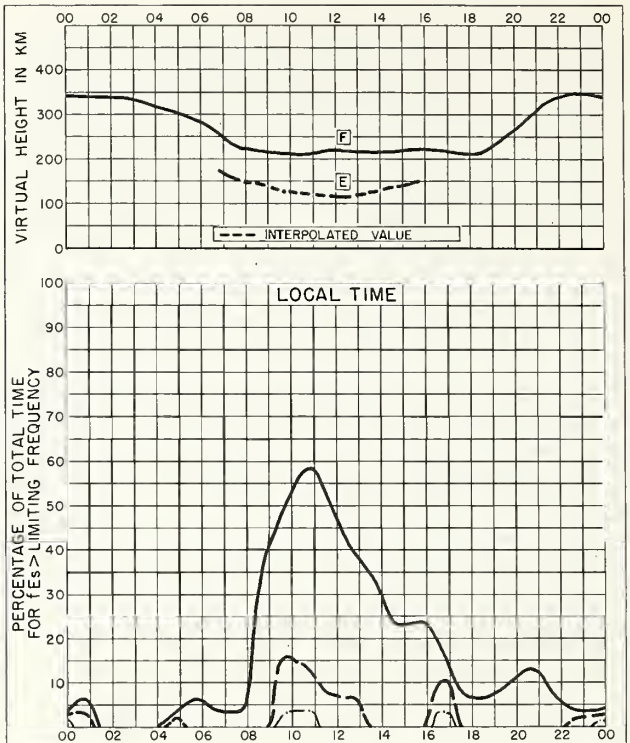


Fig. 117. PORT LOCKROY AUGUST 1957

NBS 490

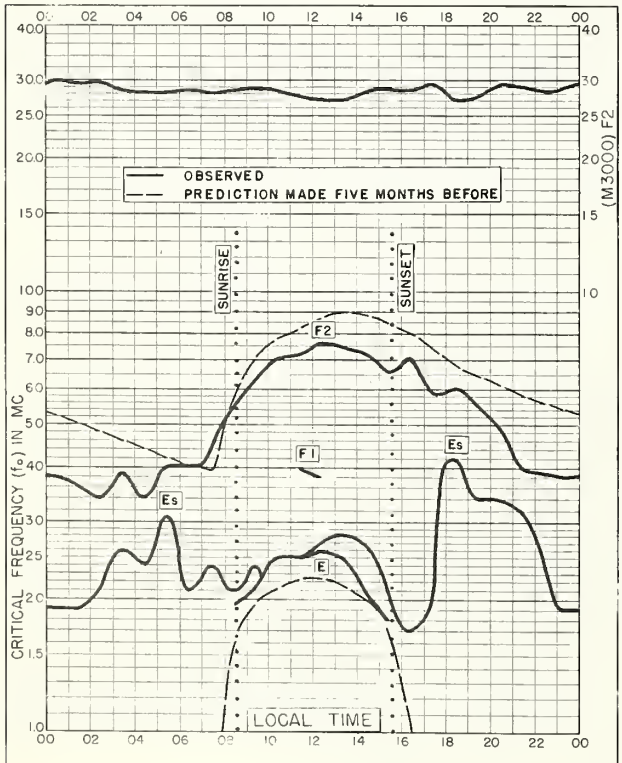


Fig. 118. WILKES STATION
66.2°S, 110.5°E AUGUST 1957

NBS 503

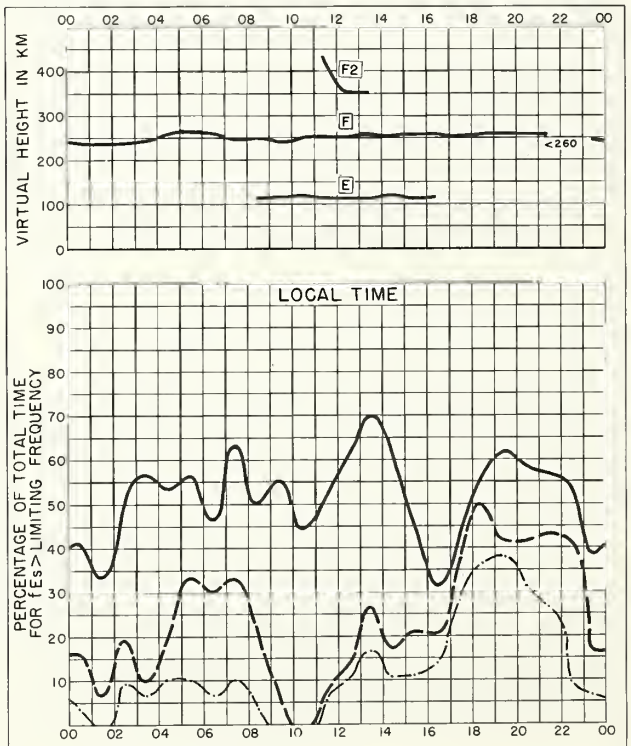


Fig. 119. WILKES STATION AUGUST 1957

NBS 490

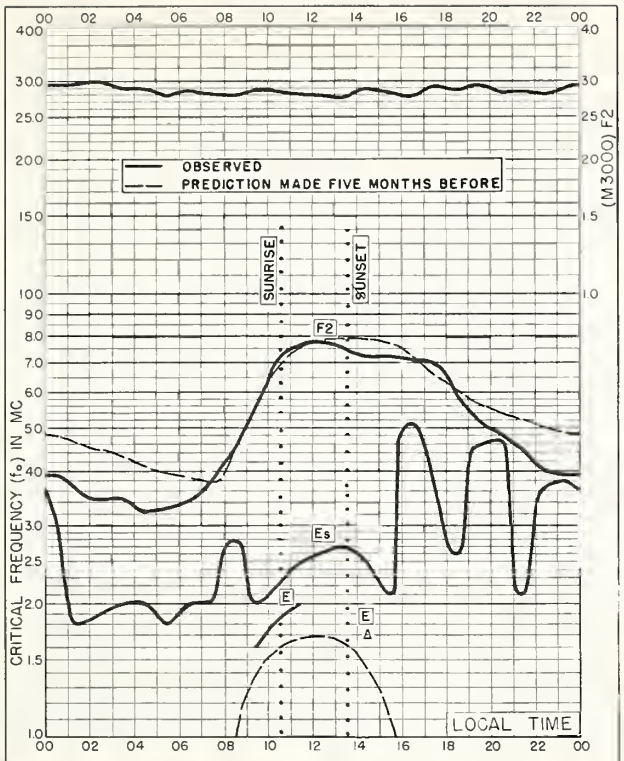


Fig. 120. WILKES STATION
66.2°S, 110.5°E JULY 1957

NBS 503

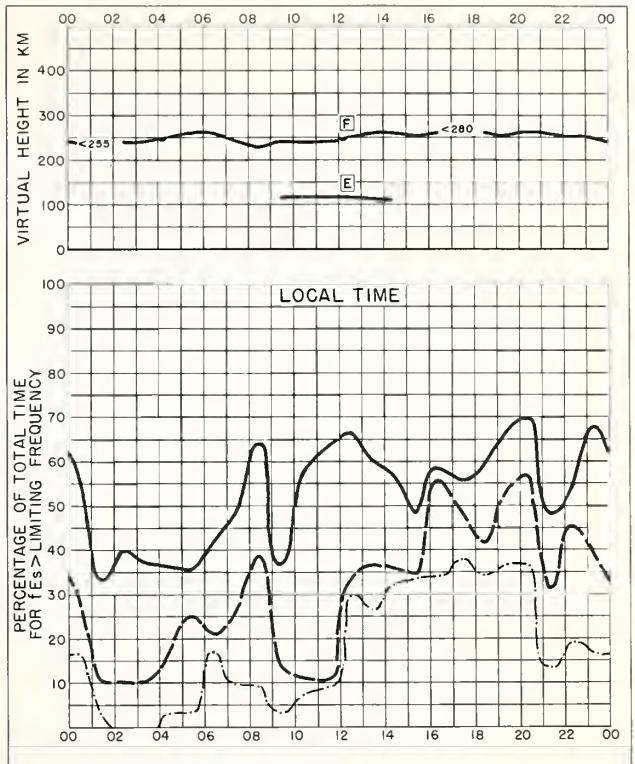


Fig. 121. WILKES STATION JULY 1957

NBS 490

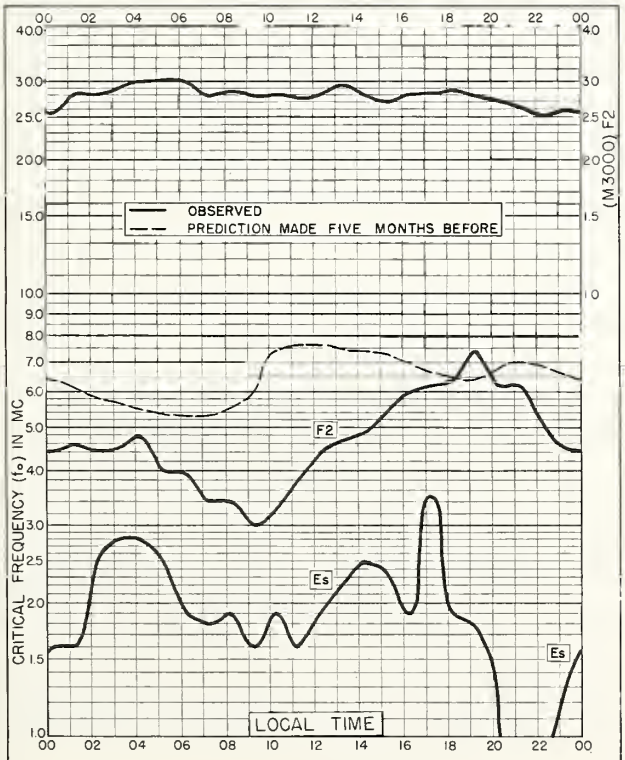


Fig. 122. LITTLE AMERICA
78.2°S, 162.2°W JULY 1957

NBS 503

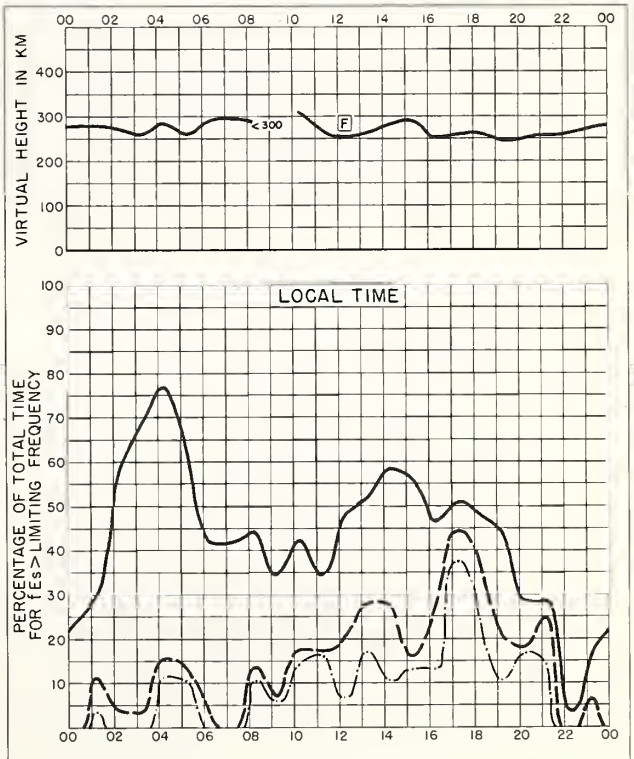


Fig. 123. LITTLE AMERICA JULY 1957

NBS 490

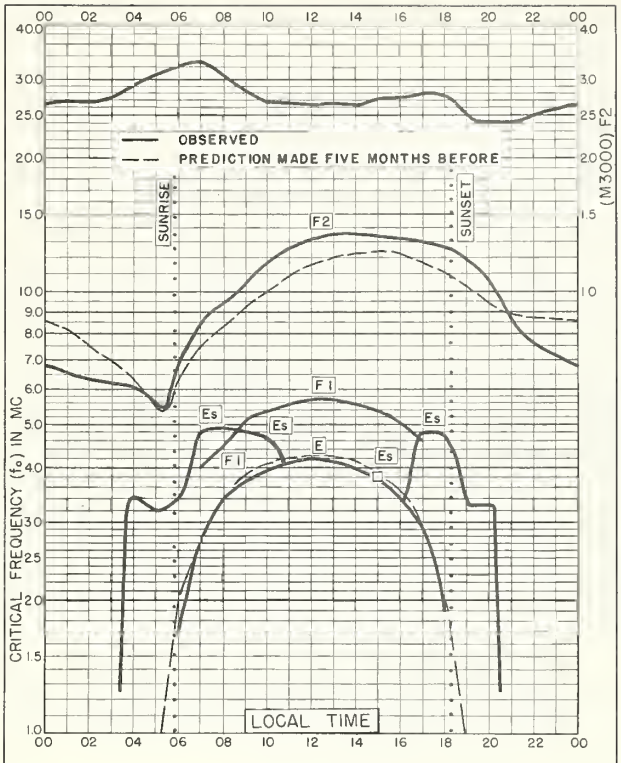
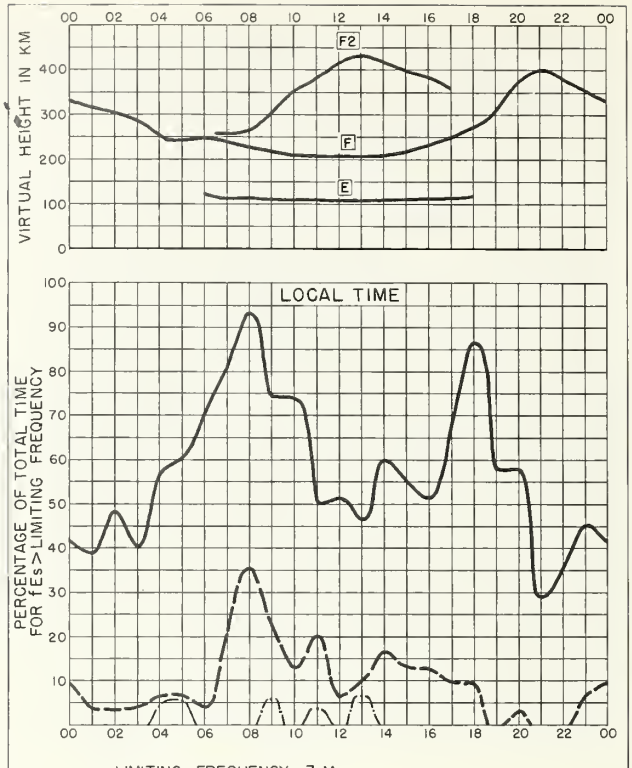


Fig. 124. DAKAR, FRENCH W. AFRICA
14.7°N, 17.4° W AUGUST 1956

NBS 503



AUGUST 1956

Fig. 125. DAKAR, FRENCH W. AFRICA

NBS 490

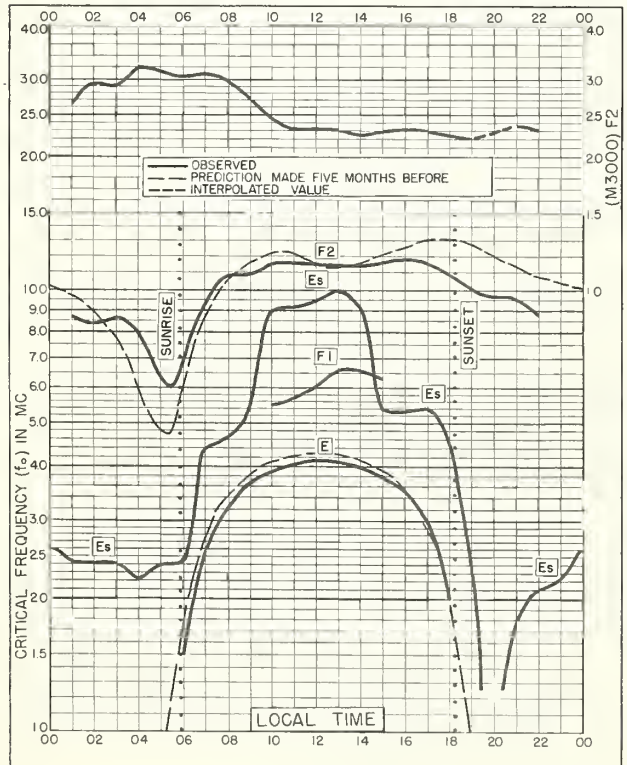
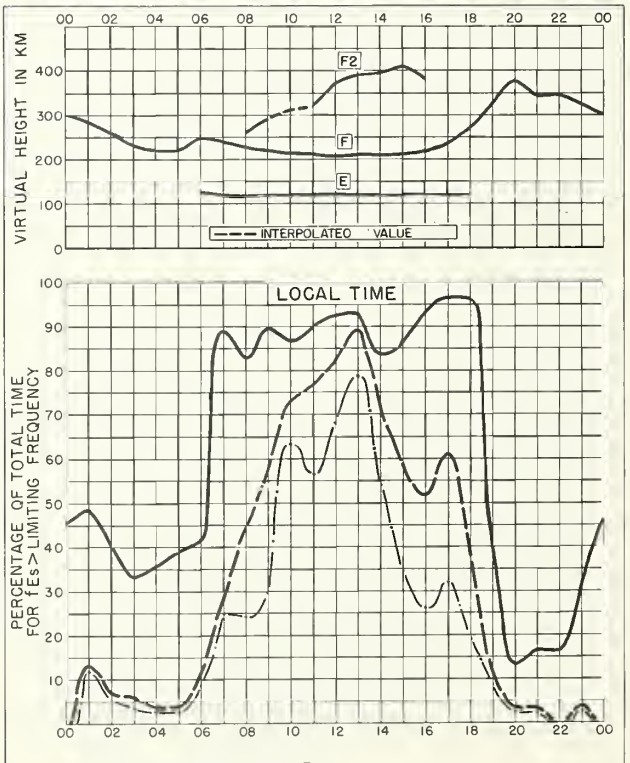


Fig. 126. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E AUGUST 1956

NBS 503



AUGUST 1956

Fig. 127. DJIBOUTI, FRENCH SOMALILAND

NBS 490

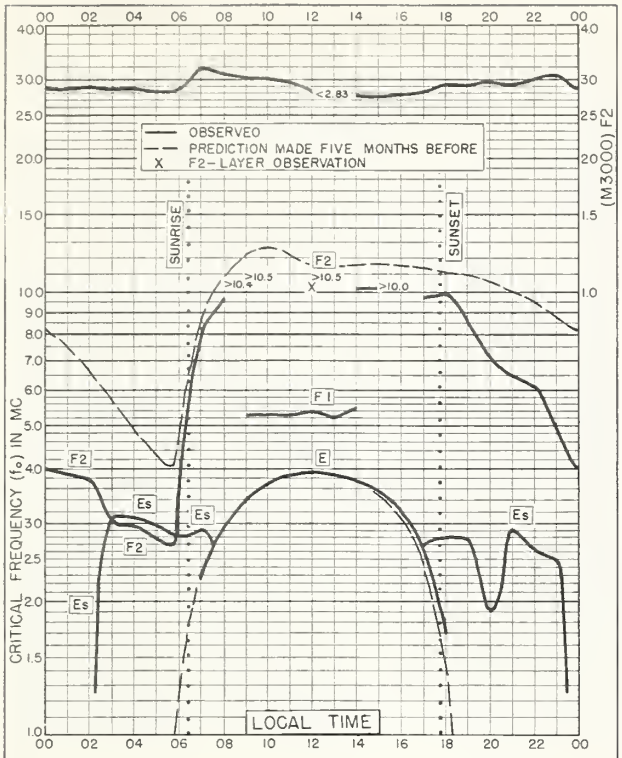


Fig. 128. TANANARIVE, MADAGASCAR
18.9°S, 47.6°E AUGUST 1956

NBS 503

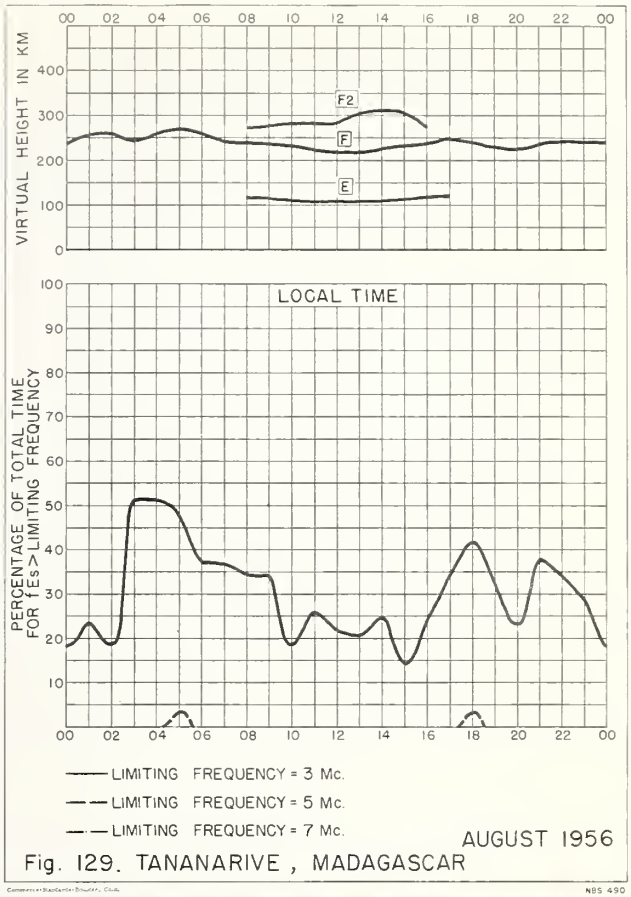


Fig. 129. TANANARIVE, MADAGASCAR
AUGUST 1956

NBS 490

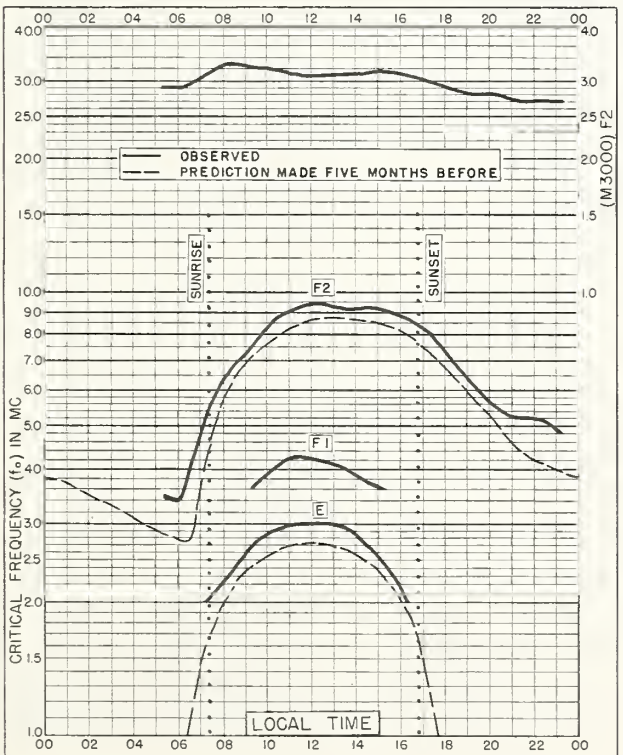


Fig. 130. CAMPBELL I.
52.5°S, 169.2°E AUGUST 1956

NBS 503

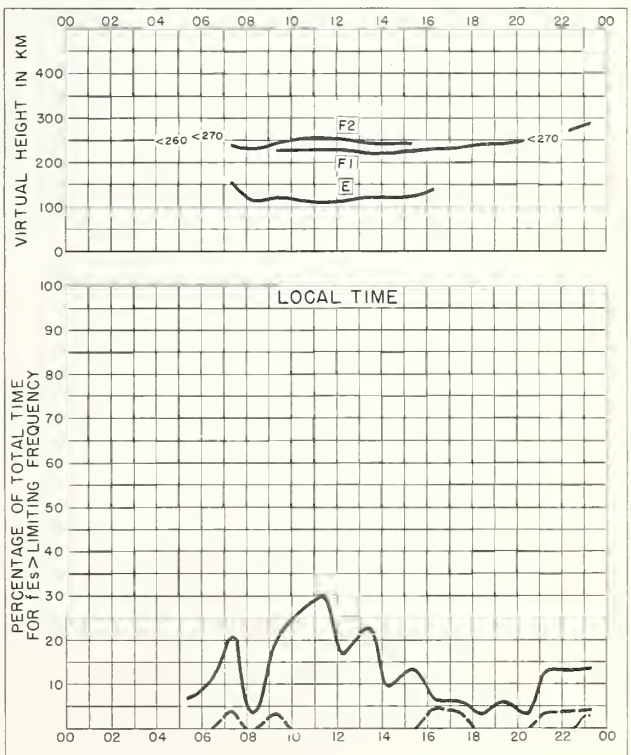


Fig. 131. CAMPBELL I. AUGUST 1956

NBS 490

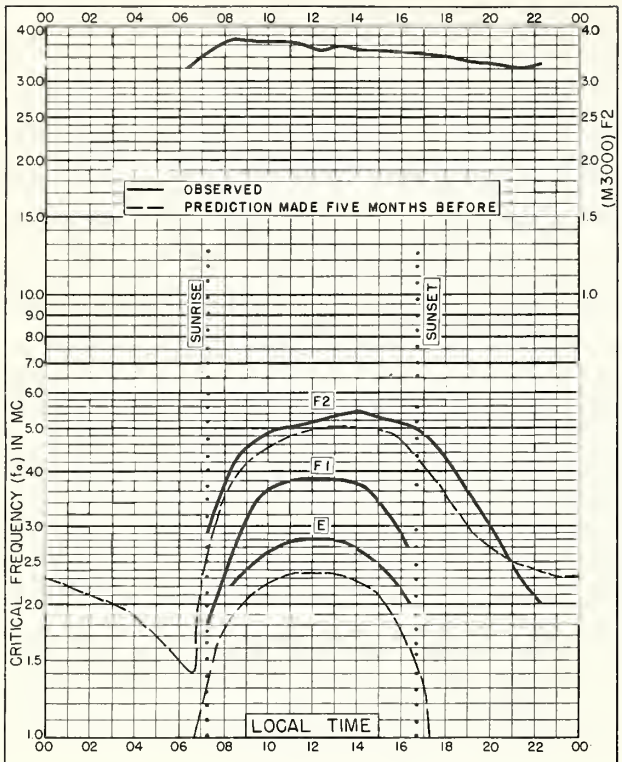


Fig. 132. CAMPBELL I.
52.5° S, 169.2°E AUGUST 1955

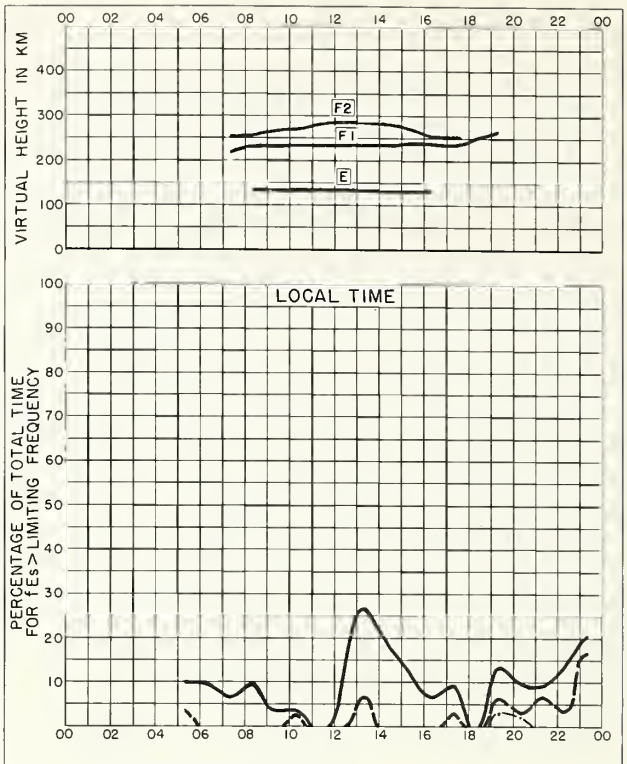


Fig. 133. CAMPBELL I. AUGUST 1955

Commerce-Standards-Boulder, Colo. NBS 490

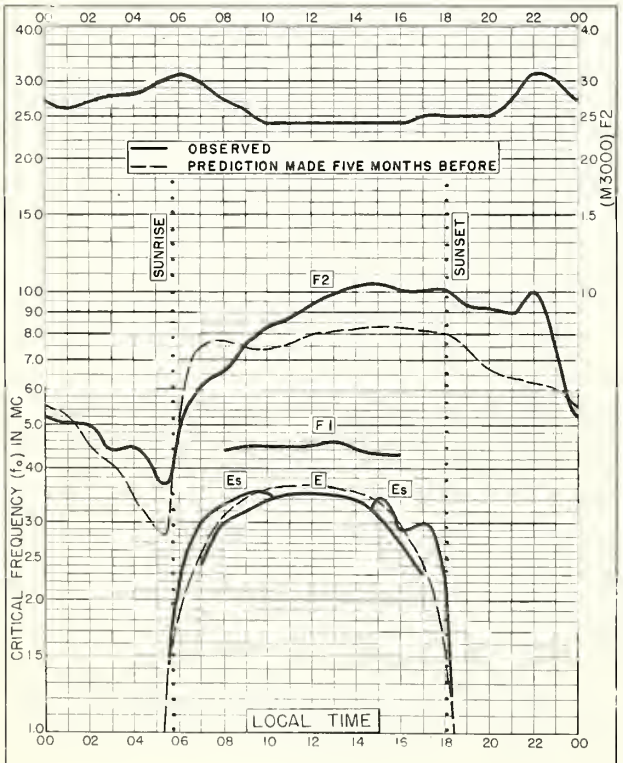


Fig. 134. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E DECEMBER 1952

NBS 503

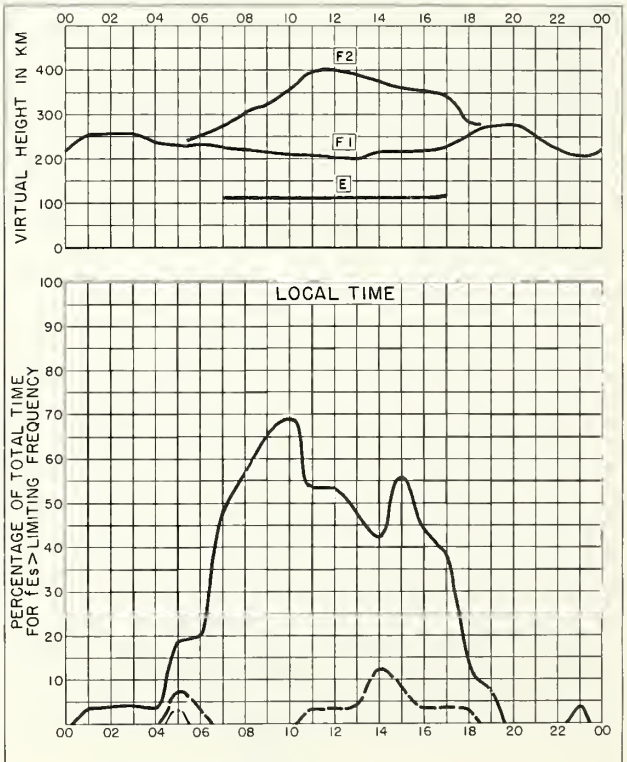


Fig. 135. LEOPOLDVILLE, BELGIAN CONGO DECEMBER 1952

Commerce-Standards-Boulder, Colo. NBS 490

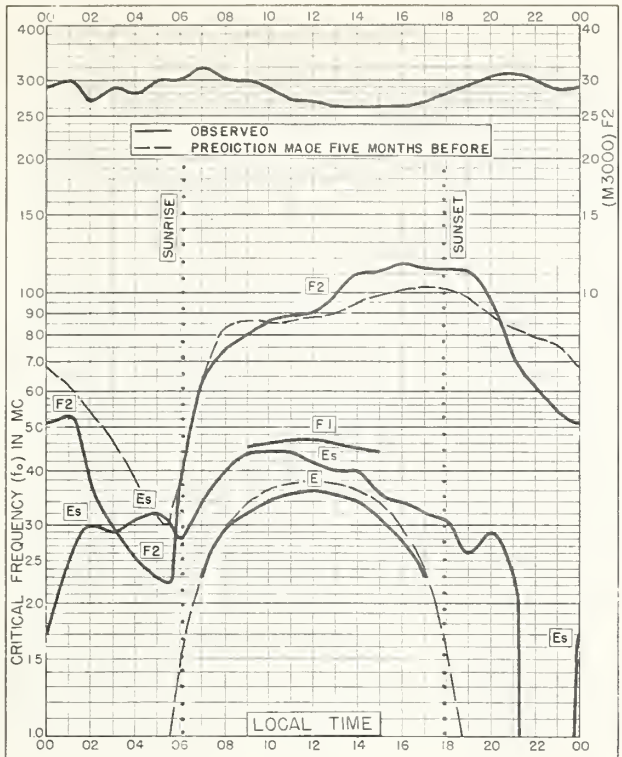
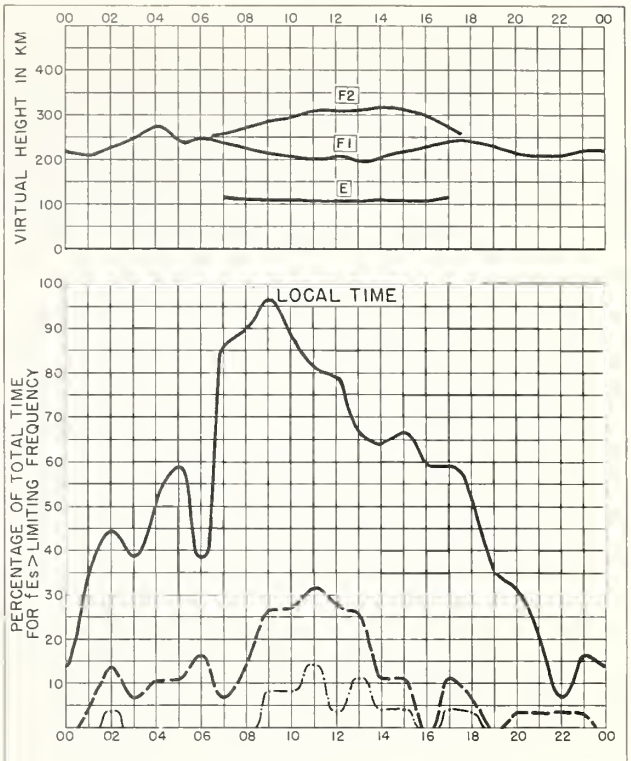


Fig. 136. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E AUGUST 1952

NBS 503



AUGUST 1952

Fig. 137. LEOPOLDVILLE, BELGIAN CONGO

NBS 490

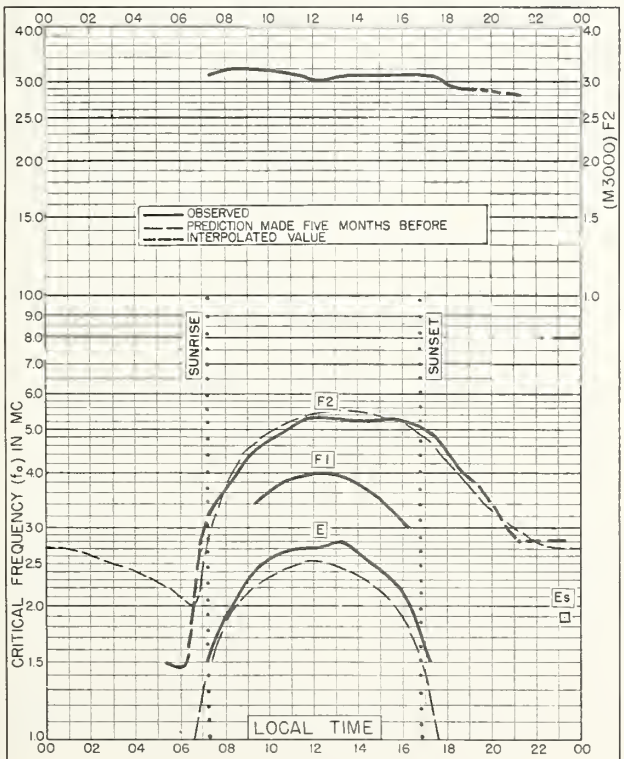


Fig. 138. CAMPBELL I.
52.5°S, 169.2°E AUGUST 1952

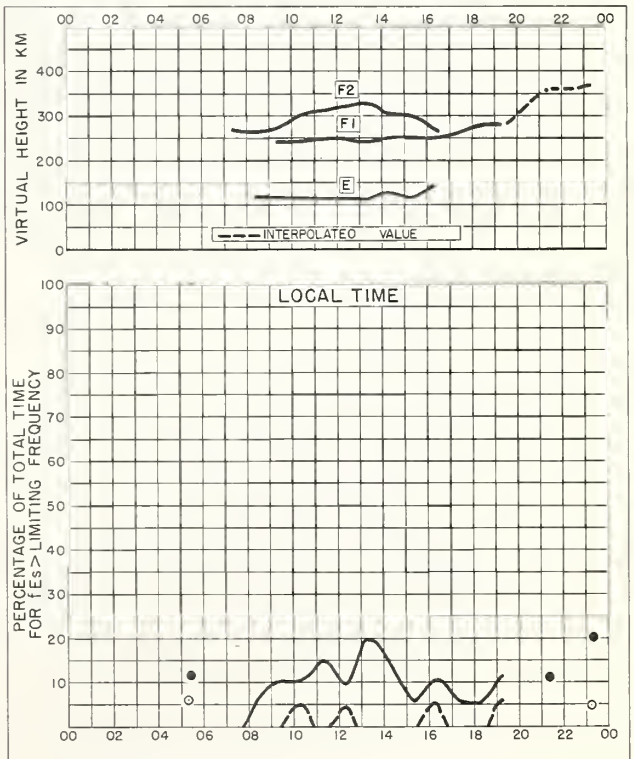


Fig. 139. CAMPBELL I. AUGUST 1952

NBS 490

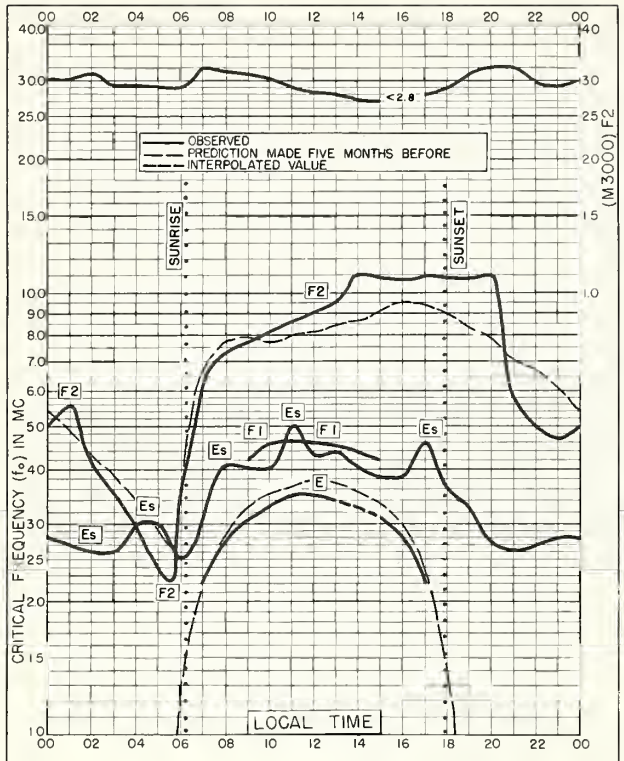
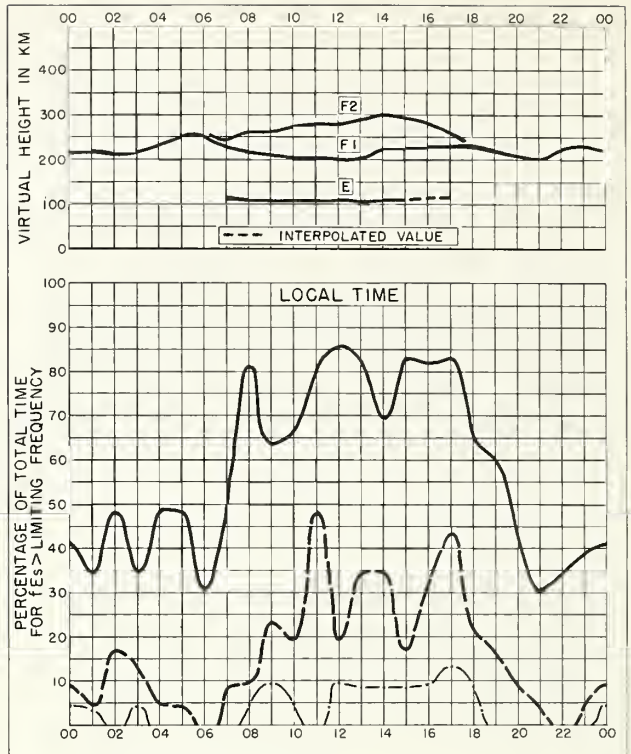


Fig. 140. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E JULY 1952



JULY 1952
Fig. 141. LEOPOLDVILLE, BELGIAN CONGO

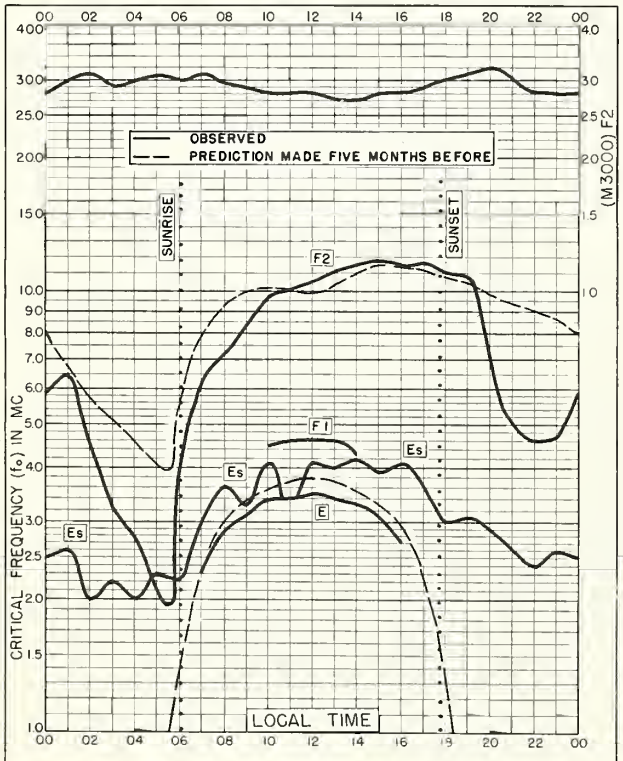
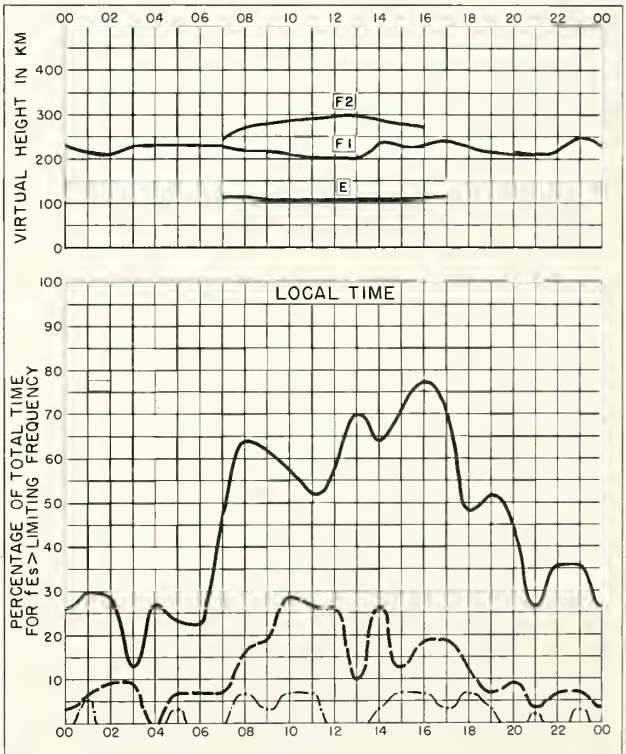


Fig. 142. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E MAY 1952



MAY 1952
Fig. 143. LEOPOLDVILLE, BELGIAN CONGO

Index of Tables and Graphs of Ionospheric Data

in CRPL-F177 (Part A)

Index (CRPL-F177 (Part A), continued)

Index (CRPL-F177 (Part A), concluded)

CRPL Reports

[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Air Force, TO 31–3–28 series). On sale by Superintendent of Documents * Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic or other radio propagation data.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. $1.25.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.
NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles. 30 cents.
NBS Circular 582. Worldwide Occurrence of Sporadic E. $3.25.

These Circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

---

* For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C. Price 10 cents (single copy). Subscription Price: $1.00 a year; 50 cents additional for foreign mailing.